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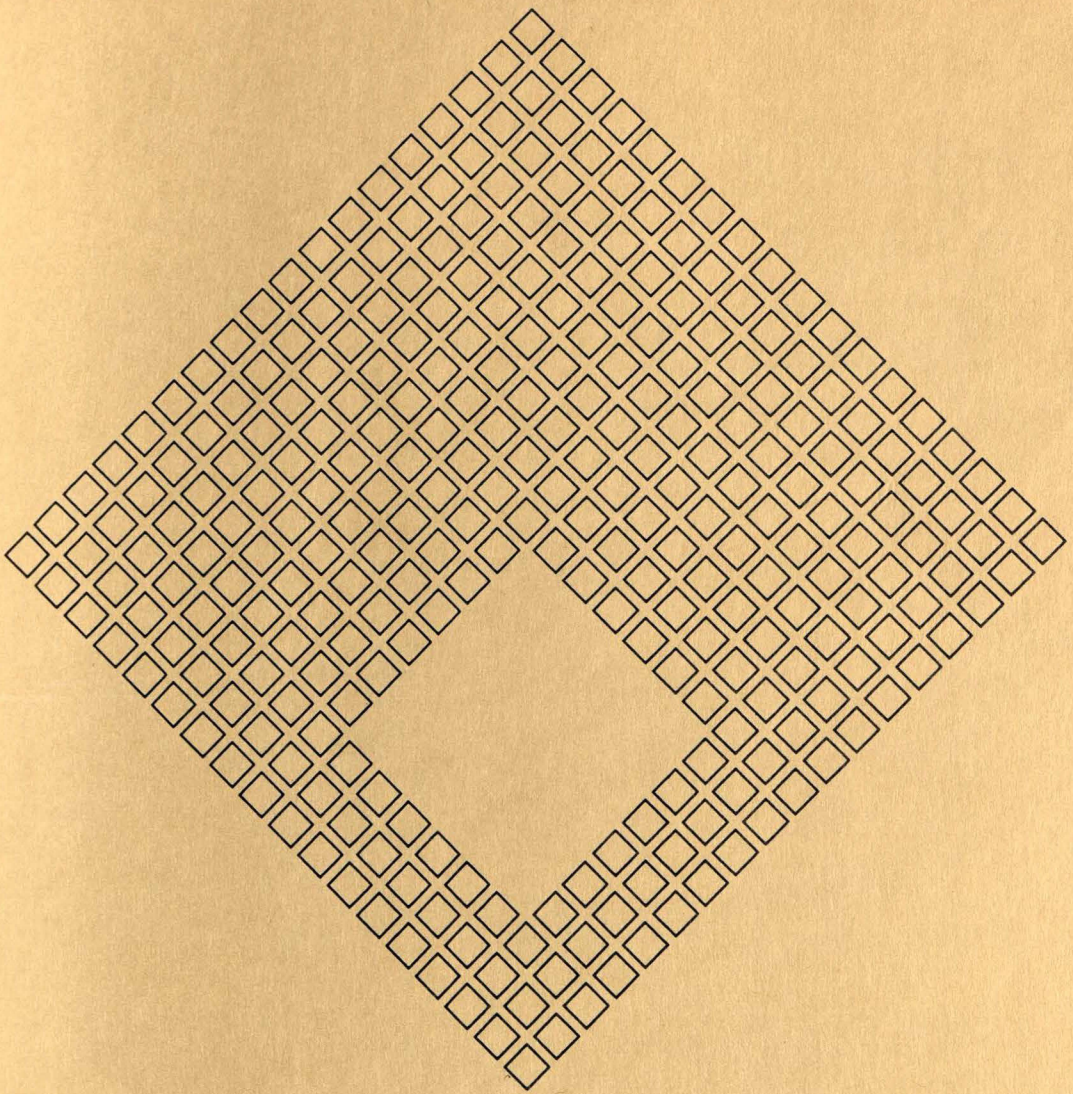

Primary Forest Products

industry and timber use, Michigan, 1977

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FOREWORD

This publication contains the results of a detailed study of forest industry, industrial roundwood production, and associated logging and primary mill residues in Michigan in 1977. Such detailed information is necessary for intelligent planning and decision making in wood procurement, forest resource management, and forest industry development. Likewise, researchers need current forest industry and industrial roundwood information for planning projects.

Special thanks are given to the primary wood-using firms that supplied information for this study. Their cooperation is greatly appreciated.

Quantities shown may vary slightly from one table to another because of rounding differences, but these differences are insignificant.

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PRIMARY FOREST PRODUCTS INDUSTRY AND TIMBER USE, MICHIGAN, 1977

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HIGHLIGHTS

- Industrial roundwood production in 1977 was at least 15 percent higher in each Inventory Unit than in 1972.
- Principal softwoods cut were jack pine, balsam fir, and red pine; aspen constituted 43 percent of the hardwood harvest.
- One-fifth of the Michigan industrial roundwood was exported, mainly to Wisconsin.
- Overcutting (from a sustained yield basis) of aspen appears likely in 1977 in many counties, particularly in the Northern Lower Peninsula.
- Approximately 716,000 cords of residue were generated on industrial roundwood logging operations.
- Michigan produced 1.59 million cords of pulpwood, surpassed only by the production of 1974.
- Michigan loggers harvested 514 million board feet of saw logs, up 13 percent from 1972.
- Aspen, hard maple, and red oak, the principal species cut, provided 53 percent of the saw log production.
- Seven percent (20 mills) of Michigan's sawmills sawed 39 percent of the lumber in 1977.
- Michigan exported 29 percent of its 42.7-million-board foot veneer log harvest to other States and Canada; two-thirds of the harvest was in the Western UP.
- Use of coarse mill residue for pulp and fuelwood has greatly expanded since 1975; finding customers is no longer a problem.
- Additional markets for fine mill residue are needed as one-third was not used in 1977.

PRIMARY FOREST INDUSTRY—INDUSTRIAL ROUNDWOOD

Of the 320 active Michigan primary wood-using mills in 1977, 284 were sawmills. The number of active (operating) mills was nearly the same as in 1972. Twenty large sawmills, each cutting 5 million board feet of lumber or more annually, operated in 1977. More large sawmills operated than in any recorded year during the last quarter century. Log and bolt receipts at active mills (except treating plants) were 176.1 million cubic feet in 1977, up 21 percent from 1972. Both hardwood and softwood demand were high as markets were strong for products such as pallets, railroad ties, furniture, construction lumber, paper, and paperboard.

Medium to large-size primary mills are scattered throughout Michigan with the heaviest concentration in the Western Upper Peninsula (WUP) and Northern Lower Peninsula (NLP) (fig. 1).

Michigan is nearly self-sufficient in roundwood requirements; only two percent was imported—primarily softwoods from Wisconsin.

Roundwood production in 1977 was significantly higher than in 1972 in every Inventory Unit:

Unit	Production		Change
	1972	1977	
	(Thousand cubic feet)		(percent)
EUP	39,098	49,614	+27
WUP	54,931	63,340	+15
NLP	71,681	82,394	+15
SLP	18,196	20,958	+15
Total	183,906	216,308	+18

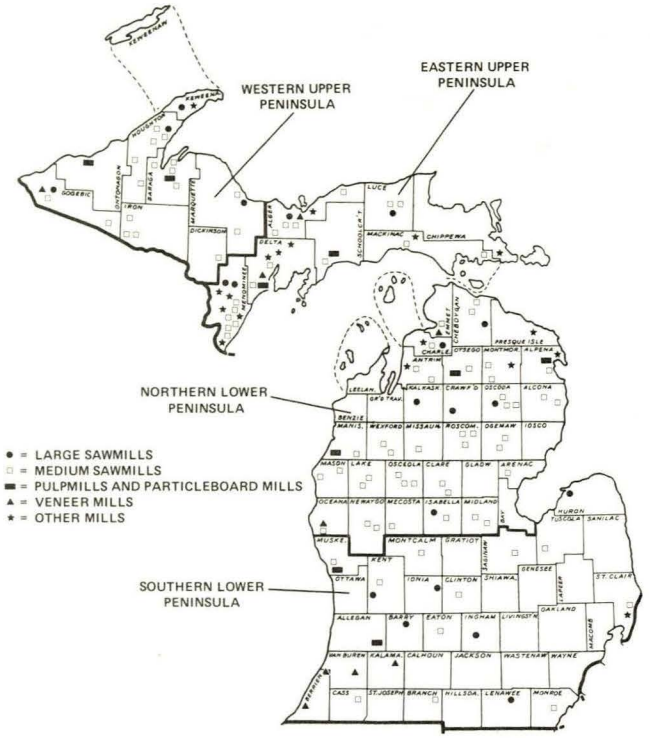


Figure 1.— *Primary wood-using mills and Inventory Units in Michigan, 1977. Sawmills are classed by volume of lumber produced in 1977: large = 5 million board feet or more; medium = 1 to 4.999 million board feet (smaller sawmills not shown). The Inventory Units are the geographical areas used by the Resources Evaluation Project to report periodic inventories and use of the Nation's forest resources.*

These were good years to compare because market demand for roundwood was similar both years. The Eastern UP timber resource appeared to be underutilized in 1972 compared to the other Units. Apparently industrial roundwood users and producers ?reed since the percentage production increase in ?77 over 1972 was markedly higher in the Eastern ? than elsewhere.

Iron, Marquette, and Menominee Counties each produced more than 10 million cubic feet of industrial roundwood.

Principal softwoods harvested in 1977 were jack pine, balsam fir, and red pine. Aspen constituted 43 percent of the hardwood cut. Red oak and hard maple were other major hardwoods cut.

One-fifth of the industrial roundwood was exported; Wisconsin mills procured more than 90 percent of the exports. Overall, Michigan was a net exporter of 39.9 million cubic feet of industrial roundwood.

TIMBER REMOVALS FOR INDUSTRIAL ROUNDWOOD

Timber removals (from growing stock on commercial forest land) were an estimated 214.6 million cubic feet, a rise of 10 percent from 1972. Heaviest cutting per thousand acres of stocked commercial forest land was in Menominee, Iron, and Dickinson Counties in the UP and Ionia, Montmorency, Osceola, Clare, Kent, Barry, Lake, Eaton, and Mecosta Counties in the LP (fig. 2).

Timber removals in two major species groups—pine and aspen—were compared on a county basis with net annual growth (fig. 3). These comparisons show in a rough way where timber overcutting or undercutting (in terms of sustained yield) was possible in 1977.

These indicators of possible overutilization or underutilization of species in 1977 in specific areas of Michigan should be used cautiously in deciding future wood procurement strategy because: (1) wood procurement patterns and volumes change from year

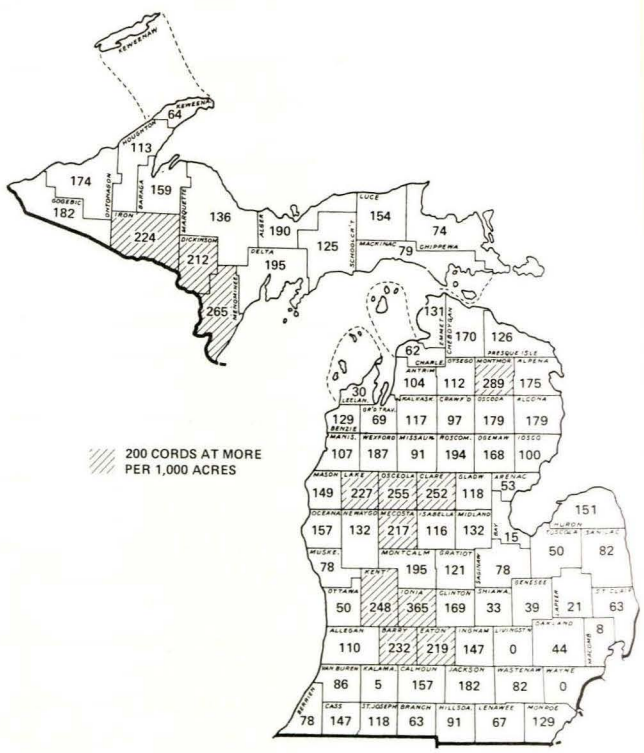


Figure 2.—*Timber removals for industrial roundwood in 1977 from growing stock on commercial forest land in Michigan counties (in cords per 1,000 acres). Acres of stocked commercial forest land were determined during the last forest inventory in Michigan.*

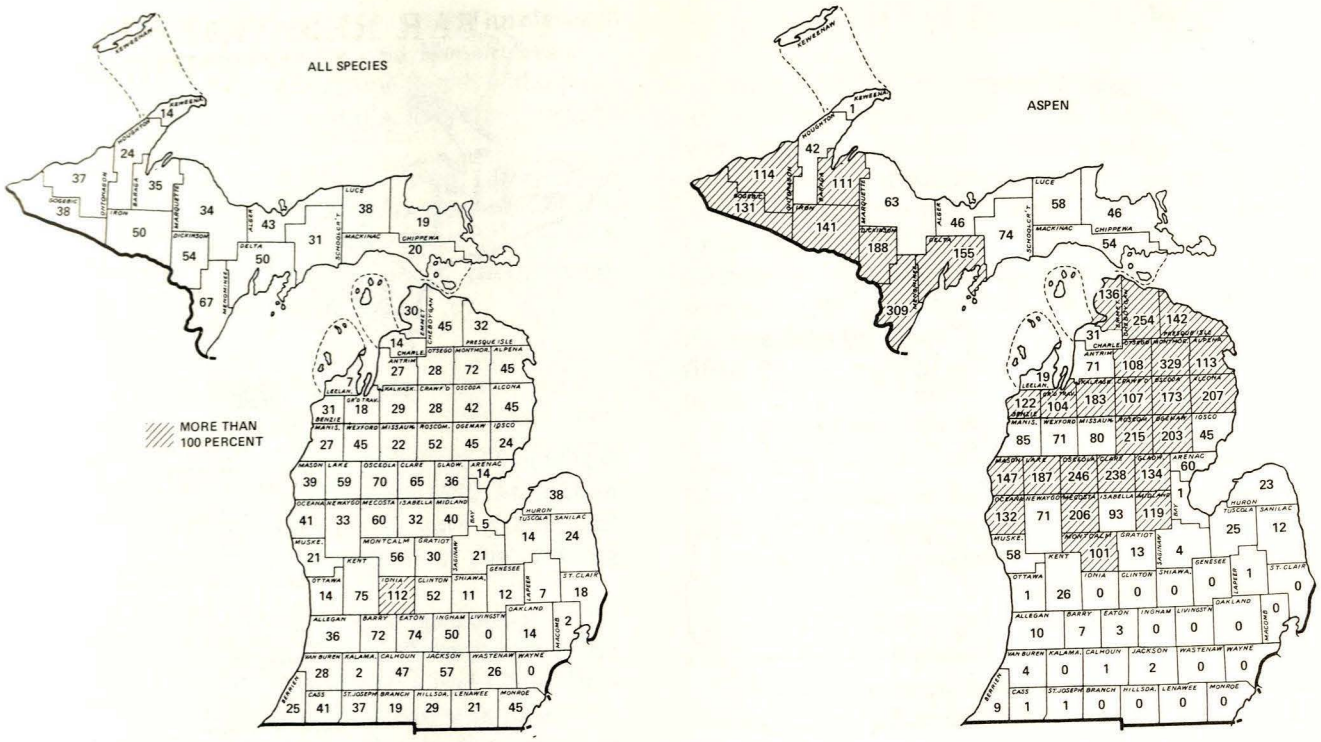
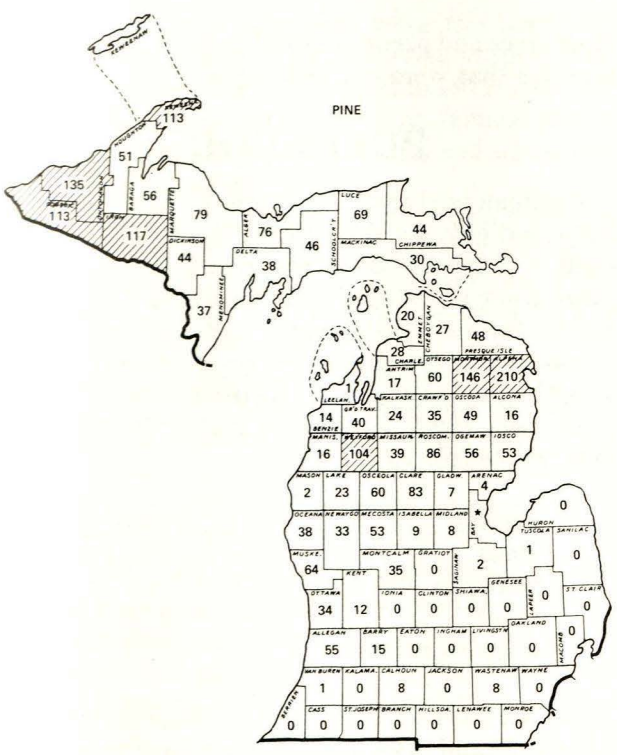


Figure 3.— *Timber removals for industrial roundwood in 1977 from growing stock on commercial forest land in Michigan counties as a percent of net annual growth (* = less than 0.5 percent). Net annual growth was determined during the last forest inventory in Michigan.*



to year, (2) net annual growth used in the comparison was for 1965, (3) stand age structure may mask the extent of under- or overutilization, and (4) apparent overcutting or undercutting may be a temporary timber management tool to improve stand structure and species mix.

Pine appears to have been overcut in 1977 in Alpena, Montmorency, and Ontonagon Counties. Underutilization of pine probably occurred in Mackinac, Crawford, Kalkaska, and Lake Counties; all have large volumes of pine growing stock.

Overcutting of aspen in 1977 seems likely in many counties, particularly in the Northern LP. Growing stock removals for industrial roundwood was more than twice the rate of 1965 net annual growth in Menominee, Cheboygan, Montmorency, Alcona, Roscommon, Ogemaw, Osceola, Clare, and Mecosta Counties. On the other hand, aspen harvesting could probably have been increased in the Eastern UP without exceeding a sustained yield.

Logging activity was greatest in the Western UP and Menominee, Delta, and Alger Counties in the Eastern UP (fig. 4).

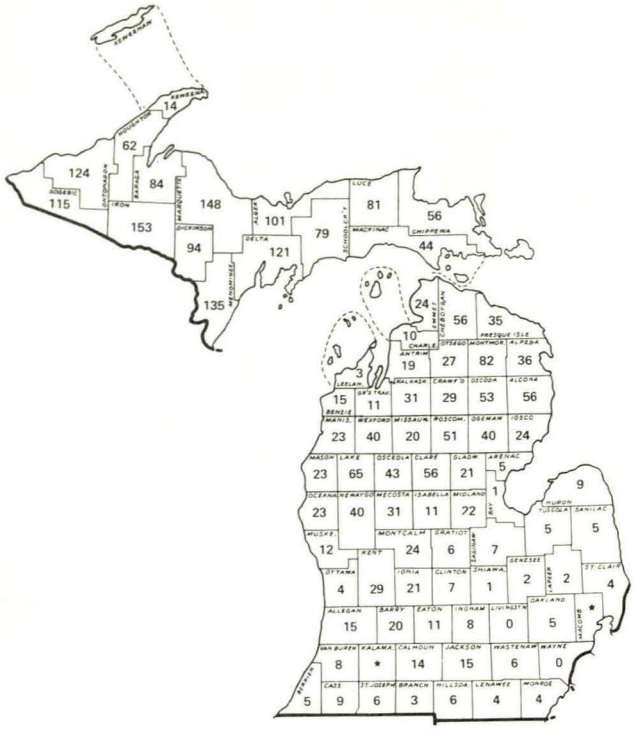


Figure 4.— *Timber removals from growing stock on commercial forest land for industrial roundwood (to the nearest thousand standard cords, unpeeled) in Michigan counties, 1977. (* = less than 500 cords). One cord equals 79 cubic feet of solid wood fiber.*

Figure 5.— *Logging residue generated during industrial roundwood production (to the nearest 100 standard cords, unpeeled) in Michigan counties, 1977. One cord equals 79 cubic feet of solid wood fiber. (* = less than 50 cords).*

LOGGING RESIDUE

Approximately 56.6 million cubic feet (716,000 cords) of residue were generated in 1977 on Michigan industrial roundwood logging operations. Two large midwestern pulpmills or 143,000 households (each burning 5 cords of fuelwood annually for heat) could have met their wood requirements from this quantity. Much of this residue was probably not used because of its small size, small quantities available at some sites, low quality, or lack of markets. Some was undoubtedly not used because potential buyers were unaware of its availability. Six counties each had more than 30,000 cords of residue; all were in the UP (fig. 5).

More than one-fourth of the residue was aspen followed by hard maple (12 percent), jack pine (9 percent), and red oak (8 percent). Sixty-two percent of the residue was tops and limbs of growing stock trees on commercial forest land; the remainder was sawtimber growing stock (21 percent), poletimber growing stock (7 percent) and other nongrowing stock (10 percent) such as cull portions of growing stock trees and portions of cull trees, dead trees, and saplings that were cut and not used.

PULPWOOD

Michigan produced 1.59 million cords of pulpwood, surpassed only by the production of 1974. Eighty-eight of every 100 cords was roundwood (including chips from roundwood); the remainder was wood residue from sawmills, veneer mills, and other mills.

Aspen was the dominant species harvested, followed by jack pine and oak. Nearly 47,000 cords were whole-tree chips. By species group, the pulpwood from whole-tree chips was:

Species group	Quantity (Thousand standard cords)
Softwoods	2.6
Aspen	28.4
Other hardwoods	15.9

The Northern LP supplies more pulpwood than any other Unit and is the most stable area of production.

Counties furnishing more than 90,000 cords each were Iron, Delta, Marquette, and Menominee.

Loggers shipped more than one-fourth of the pulpwood harvest to Wisconsin mills, long-time customers for Michigan wood.

Eight Michigan pulpmills received 1.23 million cords of pulpwood; more than 90 percent was Michigan wood. Michigan has always been nearly self-sufficient in pulpwood requirements. Hemlock demand was the highest since 1951.

SAW LOGS

Michigan loggers cut 514 million board feet of saw logs in 1977, a 13 percent gain from 1972. More than four-fifths was hardwood. Aspen, hard maple, and red oak accounted for 53 percent of the saw log harvest.

Sixty million board feet were shipped out-of-State; 88 percent was Western UP wood. Wisconsin was the main customer followed by Indiana and Ohio. Two-fifths of the wood sent to Wisconsin was pine.

Aspen, hard maple, and red oak, the principal species cut, provided 53 percent of the saw log production. Aspen production increased 35 million board feet over 1972, the red oak harvest rose 21 million board feet, and the paper birch harvest almost doubled. Yellow birch demand plummeted to less than one-fourth the 1972 level. Other significant declines from 1972 were in hard maple and hemlock.

White, red, and jack pine were the important softwoods harvested, reflecting excellent lumber demand in construction. Compared to 1972, jack pine demand more than tripled, red pine demand was up more than two and one-half times, and white pine requirements rose 80 percent.

More than half the aspen and the red oak was cut in the Northern LP, the leading saw log producing region. Gogebic, Ontonagon, Marquette, and Alger Counties, all in the UP, each furnished more than 20 million board feet of saw logs.

Although Michigan's active sawmill population was similar in 1972 and 1977, their saw log receipts expanded from 418 million board feet in 1972 to 457 million board feet in 1977. Less than 3 million board feet was procured from other States. Average lumber production per mill continues to climb.

Michigan's saw log markets and lumber production are strongly influenced by the 20 large sawmills, each producing more than 5 million board feet of lumber annually. These mills (7 percent of the total) sawed 39 percent of Michigan's lumber in 1977.

OTHER PRODUCTS

Other industrial roundwood products (8 percent of all industrial roundwood) cut in Michigan in 1977 were veneer logs, particleboard bolts, cabin logs, shingle bolts, poles, commercial posts, and piling.

Aspen was the leading veneer species cut followed by hard maple and yellow birch. Michigan exported 29 percent of its 42.7-million-board foot veneer log harvest in 1977 to other States and Canada. Wisconsin and Indiana were important customers. Three-fifths of the exports were hard maple and yellow birch.

Two-thirds of the veneer log harvest was in the Western UP with heavy cutting in Gogebic and Ontonagon Counties. Lower Peninsula loggers supplied only 13 percent of the total.

Veneer log receipts in Michigan were 30.8 million board feet. Michigan's 9 veneer mills imported only 1.5 percent of their log requirements, all from Indiana and Kentucky.

Commercial post production is concentrated in the South-central UP and Northeastern LP, particleboard bolt production in the Northern LP, and pole production in 6 UP counties and 3 Northern LP counties.

PRIMARY MILL RESIDUE

During 1977, Michigan primary wood-using mills (excluding pulp and particleboard mills) generated 637,000 green tons of coarse residue, 395,000 green tons of fine residue, and 279,000 green tons of bark. The percent of each residue class not used (piled, land fill, burned as waste, etc.) was:

Class of residue	Softwood	Hardwood
	(Percent)	
Coarse	7	5
Fine	37	34
Bark	43	29

Finding customers for coarse residue is no longer a problem. Use of coarse residue for pulp and fuelwood has greatly expanded since 1975.

Additional markets are needed for fine residue as one-third was not used in 1977. Primary uses are for soil conditioners, mulch, livestock bedding, and poultry litter. These uses have increased 80 percent since 1975. The largest quantities of fine residue not used were in the Western UP and Northern LP:

Unit	Fine Residue	
	Softwood	Hardwood
	(Thousand green tons)	
Eastern UP	5.29	9.91
Western UP	1.66	42.26
Northern LP	10.47	54.61
Southern LP	.22	11.71
Total	17.64	118.49

Similarly, the Western UP and Northern LP had the highest concentrations of bark that was not used:

Unit	Bark	
	Softwood	Hardwood
	(Thousand green tons)	
Eastern UP	3.47	4.88
Western UP	1.11	29.85
Northern LP	12.30	29.73
Southern LP	0.0	4.70
Total	16.88	69.16

Demand for bark was excellent in the Southern LP where only 8 percent was not used.

OUTLOOK

Except for periods of economic downturn, industrial roundwood production is likely to continue increasing in Michigan during the next 5 years. Another veneer mill is operating. Construction of a pulpmill and waferboard plant is expected to begin by 1981.

Fine residue and bark should become more widely accepted as fuel. By 1983, most primary mill residue in economical concentrations will probably be used.

APPENDIX

STUDY METHODS

Data for this publication came from a complete canvass with a formal questionnaire of primary wood-using firms that process Michigan logs and bolts. All canvassing in Michigan was done by the Michigan Department of Natural Resources (DNR) and the Michigan Regional Planning and Development Commissions (RPDC) using personal and mail contacts; follow-up on nonrespondents was by telephone and personal contact. For a few Michigan mills that did not furnish complete data, DNR wood utilization specialists provided estimates based on prior knowledge and contacts. The Michigan DNR, using similar procedures, contacted all out-of-State mills (except pulpmills) using Michigan roundwood. Similarly, the North Central Forest Experiment Station canvassed out-of-State pulpmills. The Station edited and compiled the data.

Logging utilization factors developed from a logging study by the Station in 1977-1978 were used to estimate growing stock and sawtimber removals for industrial roundwood in 1977.

DEFINITION OF TERMS

Timber removals for industrial roundwood.—The volume of sound bole wood (between a 1-foot stump and a minimum top diameter of 4.0 inches outside bark or to a point where the central stem breaks into limbs) in poletimber and sawtimber growing-stock trees on commercial forest land removed annually for industrial roundwood products (including logging residues).

Sawtimber removals for industrial roundwood.—The volume of sound bole wood (between a 1-foot stump and the point on the bole above which a saw log cannot be produced) in sawtimber growing-stock trees on commercial forest land removed annually for industrial roundwood products (including logging residues). The minimum saw log top is 7.0 inches diameter outside bark for softwoods and 9.0 inches diameter outside bark for hardwoods.

Commercial forest land.—Forest land that is producing or capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. Generally, this includes

areas suitable for growing crops of industrial wood in excess of 20 cubic feet per acre annually.

Logging residue.—The unused portions of trees cut or killed by logging, except roots and stumps 1 foot or less above the ground.

Industrial roundwood products.—Saw logs, pulpwood, veneer logs, poles, commercial posts, piling, particleboard bolts, shaving bolts, lath bolts, charcoal bolts, and chips from roundwood.

Industrial roundwood production.—The quantity of industrial roundwood harvested in a geographic area.

Industrial roundwood receipts.—The quantity of industrial roundwood received in a geographic area regardless of the geographic source.

Consumption.—The quantity of a commodity, such as pulpwood, utilized.

Growing-stock trees.—All live poletimber and sawtimber trees of commercial species except rough and rotten trees. Poletimber trees are 5.0 to 8.9 inches d.b.h. for softwoods and 5.0 to 10.9 inches d.b.h. for hardwoods. Softwood sawtimber trees are 9.0 inches d.b.h. or larger; hardwood sawtimber trees are 11.0 inches d.b.h. or larger.

Primary wood-using mill residue.—Wood materials (coarse and fine) and bark not utilized for principal products at manufacturing plants using roundwood. These residues include wood products (by-products) obtained incidental to production of principal products and wood materials not utilized for some product.

Coarse mill residue.—Wood residue suitable for chipping such as slabs, edgings, and veneer cores.

Fine mill residue.—Wood residue not suitable for chipping such as sawdust and veneer clippings.

COMMON AND SCIENTIFIC NAMES OF TREE SPECIES MENTIONED

SOFTWOODS

Eastern white pine ..... *Pinus strobus*
Red pine ..... *Pinus resinosa*
Jack pine ..... *Pinus banksiana*
Spruce:
  White spruce ..... *Picea glauca*
  Black spruce ..... *Picea mariana*
Balsam fir ..... *Abies balsamea*
Eastern hemlock ..... *Tsuga canadensis*
Tamarack ..... *Larix laricina*
Northern white-cedar ..... *Thuja occidentalis*

HARDWOODS

White oak:
  White oak ..... *Quercus alba*
  Bur oak ..... *Quercus macrocarpa*
  Chinkapin oak ..... *Quercus muehlenbergii*
  Swamp white oak ..... *Quercus bicolor*
Red Oak:
  Northern red oak ..... *Quercus rubra*
  Black oak ..... *Quercus velutina*
  Pine oak ..... *Quercus palustris*
Hickory:
  Bitternut hickory ..... *Carya cordiformis*
  Pignut hickory ..... *Carya glabra*
  Shagbark hickory ..... *Carya ovata*
Yellow birch ..... *Betula alleghaniensis*
Hard maple:
  Black maple ..... *Acer nigrum*
  Sugar maple ..... *Acer saccharum*
Sugar maple:
  Red maple ..... *Acer rubrum*
  Silver maple ..... *Acer saccharinum*
American beech ..... *Fagus grandifolia*
Ash:
  Black ash ..... *Fraxinus nigra*
  White ash ..... *Fraxinus americana*
Balsam poplar ..... *Populus balsamifera*
Aspen:
  Bigtooth aspen ..... *Populus grandidentata*
  Quaking aspen ..... *Populus tremuloides*
Eastern cottonwood ..... *Populus deltoides*
American basswood ..... *Tilia americana*
Black walnut ..... *Juglans nigra*
Elm:
  American elm ..... *Ulmus americana*
  Rock elm ..... *Ulmus tomasii*
  Slippery elm ..... *Ulmus rubra*
Paper birch ..... *Betula papyrifera*

Table 1.--Industrial roundwood production by type of product in Michigan, 1977

Product	Standard units	All species	Soft-woods	Hard-woods	All species	Soft-woods	Hard-woods
		Thousand standard units			Thousand cubic feet		
Pulpwood	Standard cords	1,403	476	927	110,753	37,550	73,203
Saw logs	Board feet[1/]	513,956	91,497	422,459	88,604	15,925	72,679
Veneer logs	Board feet[1/]	42,738	0	42,738	5,838	0	5,838
Piling	Linear feet	42	38	4	18	15	3
Poles	Pieces	35	32	3	301	276	25
Posts[2/]	Pieces	2,966	2,966	0	3,039	3,039	0
Miscellaneous[3/]	Cubic feet	7,755	416	7,339	7,755	416	7,339
Total	Cubic feet	216,308	57,221	159,087	216,308	57,221	159,087

[1/] International 1/4-inch rule.

[2/] Includes only posts processed at fence and treating plants.

[3/] Includes cabin logs, shingle bolts, and particleboard bolts.

Table 2.--Number of active primary wood-using mills in Michigan 1954, 1965, 1969, 1972, 1975, and 1977

Kind of mill[1/]	1954	1965	1969	1972	1975	1977
Sawmills:						
Large[2/]	11	15	17	17	12	20
Medium[3/]	85	107	103	109	76	86
Small[4/]	1,296	266	187	157	174	178
Subtotal	1,392	388	307	283	262	284
Pulpmills:	11	10	9	9	8	8
Veneer mills:	23	12	12	9	8	9
Other mills:	104	27	19	23	15	19
Total	1,530	437	347	324	293	320

[1/] Number of active small sawmills estimated for 1954.

[2/] Annual lumber production in excess of 5 million board feet.

[3/] Annual lumber production from 1 million to 5 million board feet.

[4/] Annual lumber production less than 1 million board feet.

Table 3.--Industrial roundwood receipts by type of mill in Michigan, 1954, 1965, 1972, and 1977

(In million cubic feet)

Type of mill	All species				Softwoods				Hardwoods			
	1954	1965	1972	1977	1954	1965	1972	1977	1954	1965	1972	1977
Pulpmills	32.3	65.2	66.0	82.4	14.5	17.7	15.6	28.2	17.8	47.5	50.4	54.2
Sawmills	70.3	57.4	64.0	78.7	16.5	5.7	8.3	10.5	53.8	51.7	55.7	68.2
Other mills[1/]	13.1	12.5	15.7	15.0	3.6	4.9	4.2	3.4	9.5	7.6	11.5	11.6
Total	115.7	135.1	145.7	176.1	34.6	28.3	28.1	42.1	81.1	106.8	117.6	134.0

[1/] Does not include treating plants.

Table 4.--Industrial roundwood production by species, unit, and county in Michigan, 1977

(In thousand cubic feet)

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
EASTERN UPPER PENINSULA														
Alger	42	236	867	946	216	473	130	8	48	532	9	35	1,016	257
Chippewa	126	331	183	1,070	188	164	503	11	57	821	18	72	106	134
Delta	619	1,439	506	515	285	404	471	24	76	2,855	328	64	84	499
Luce	36	338	480	1,415	319	338	230	4	34	473	37	16	727	126
Mackinac	115	439	148	224	113	95	199	4	38	892	159	43	164	168
Menominee	1,207	1,256	263	21	109	238	548	61	257	3,844	353	99	51	390
Schoolcraft	154	423	349	961	363	296	335	8	28	915	208	12	513	221
Total	2,299	4,462	2,796	5,152	1,593	2,008	2,416	120	538	10,332	1,112	341	2,661	1,795
WESTERN UPPER PENINSULA														
Baraga	83	510	634	242	191	197	184	16	21	1,849	0	53	0	414
Dickinson	198	401	124	154	111	186	174	29	100	4,193	96	120	14	309
Gogebic	22	595	717	114	530	536	290	5	90	4,059	0	87	0	243
Houghton	48	200	315	120	199	186	291	2	57	934	0	110	0	147
Iron	54	1,224	486	355	509	619	725	32	66	4,602	55	111	0	294
Keweenaw	46	3	74	5	177	157	32	0	3	5	0	2	0	77
Marquette	116	896	708	1,708	349	742	575	17	53	1,985	289	52	177	759
Ontonagon	24	365	401	81	547	548	286	3	90	5,121	0	101	0	260
Total	591	4,194	3,459	2,779	2,613	3,171	2,557	104	480	22,748	440	636	191	2,503
NORTHERN LOWER PENINSULA														
Alcona	4	4	0	89	43	24	4	0	40	2,715	9	13	9	151
Alpena	374	268	0	670	102	3	5	0	60	857	3	10	7	102
Antrim	4	1	9	47	70	4	0	0	75	390	0	263	62	14
Arenac	0	0	0	0	16	0	0	0	4	229	0	2	0	16
Bay	0	0	0	0	0	0	0	0	7	2	0	3	0	0
Benzie	0	0	0	0	40	7	0	0	52	503	0	51	49	36
Charlevoix	0	0	2	0	89	0	0	0	2	180	0	120	4	0
Cheboygan	33	10	0	258	79	63	3	0	93	2,847	3	105	60	151
Clare	1	0	0	269	30	18	0	0	62	2,152	0	44	28	37
Crawford	0	0	0	391	115	92	0	0	10	718	0	19	13	11
Emmet	0	0	2	56	31	3	0	0	74	826	0	155	55	69
Gladwin	0	0	0	18	1	0	0	0	11	1,070	0	11	0	106
Grand Traverse	0	0	6	154	63	63	0	0	52	378	0	19	11	10
Iosco	25	0	0	902	197	107	2	0	30	345	0	3	0	2
Isabella	12	0	0	0	3	11	0	0	32	357	0	19	19	12
Kalkaska	0	1	10	300	163	46	0	0	9	1,135	0	28	26	30
Lake	0	0	0	404	11	4	0	0	59	1,599	0	55	41	11
Leelanau	0	0	5	0	2	0	0	0	25	72	0	25	37	4
Manistee	0	0	0	0	164	9	0	0	54	626	0	33	61	23
Mason	0	0	0	0	11	4	0	0	22	676	0	21	27	29
Mecosta	1	0	0	0	213	7	0	0	74	1,063	0	30	18	11
Midland	0	0	0	0	17	0	0	0	44	874	0	49	4	51
Missaukee	0	0	0	105	51	41	0	0	3	696	0	4	27	53
Montmorency	128	60	0	1,494	236	72	7	0	33	3,223	5	70	25	191
Newaygo	0	0	0	0	482	6	0	0	45	761	0	19	11	9
Oceana	0	0	11	0	256	20	0	0	53	571	0	36	62	5
Ogemaw	0	0	0	469	51	99	0	0	20	1,468	0	11	16	67
Osceola	10	0	23	3	196	35	6	0	30	1,620	0	73	55	41
Oscoda	0	7	0	1,411	266	45	3	0	16	1,537	2	4	5	68
Otsego	4	8	0	505	37	24	2	0	13	1,087	0	41	6	113
Presque Isle	218	165	3	304	12	51	10	0	22	1,386	5	58	13	206
Roscommon	0	0	0	804	46	86	0	0	0	1,686	0	16	0	51
Wexford	33	0	27	822	794	21	21	0	29	534	0	78	71	12
Total	847	524	98	9,475	3,887	965	63	0	1,155	34,183	27	1,488	822	1,692

(Table 4 continued on next page)

(Table 4 continued)

SOUTHERN LOWER PENINSULA

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
Allegan	0	0	0	92	98	11	0	0	89	37	0	5	0	0
Barry	0	0	0	0	19	0	0	0	105	12	0	57	15	0
Berrien	0	0	0	0	0	0	0	0	27	13	0	11	13	0
Branch	0	0	0	0	0	0	0	0	19	0	0	8	8	0
Calhoun	0	0	0	0	7	0	0	0	79	4	0	32	6	0
Cass	0	0	0	0	0	0	0	0	28	1	0	20	22	0
Clinton	0	0	0	0	0	0	0	0	56	0	0	19	34	0
Eaton	0	0	0	0	0	0	0	0	68	4	0	25	12	0
Genessee	0	0	0	0	0	0	0	0	10	0	0	10	0	0
Gratiot	0	0	0	0	0	0	0	0	21	48	0	18	5	0
Hillsdale	0	0	0	0	0	0	0	0	39	0	0	17	6	0
Huron	0	0	0	0	0	0	0	0	144	85	0	7	0	0
Ingham	0	0	0	0	0	0	0	0	34	0	0	37	0	0
Ionia	0	0	0	0	0	0	0	0	151	0	0	31	38	0
Jackson	0	0	0	0	0	0	0	0	75	4	0	60	6	0
Kalamazoo	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Kent	0	0	0	0	34	4	0	0	181	90	0	51	43	0
Lapeer	0	0	0	0	0	0	0	0	7	2	0	9	0	0
Lenawee	0	0	0	0	0	0	0	0	42	0	0	16	4	0
Macomb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe	0	0	0	0	0	0	0	0	19	0	0	11	3	0
Montcalm	0	0	0	0	133	0	0	0	108	366	0	78	49	10
Muskegon	0	0	0	0	301	22	0	0	0	247	0	2	0	1
Oakland	0	0	0	0	0	0	0	0	61	0	0	6	0	0
Ottawa	0	0	0	0	310	2	0	0	0	1	0	0	10	0
Saginaw	0	0	0	0	3	0	0	0	65	21	0	41	0	0
St. Clair	0	0	0	0	0	0	0	0	28	0	0	10	0	0
St. Joseph	0	0	0	0	0	0	0	0	20	2	0	14	16	0
Sanilac	0	0	0	0	0	0	0	0	88	48	0	0	0	0
Shiawassee	0	0	0	0	0	0	0	0	8	0	0	8	0	0
Tuscola	0	0	0	0	1	0	0	0	42	156	0	7	0	0
Van Buren	0	0	0	0	0	2	0	0	41	8	0	10	11	0
Washtenaw	0	0	0	0	9	0	0	0	43	0	0	23	7	0
Wayne	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Total	0	0	0	92	915	41	0	0	1,699	1,149	0	645	308	11
State total	3,737	9,180	6,353	17,498	9,008	6,185	5,036	224	3,872	68,412	1,579	3,110	3,982	6,001

(Table 4 continued on next page)

(Table 4 continued)

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
EASTERN UPPER PENINSULA											
Alger	317	0	275	0	1,954	589	49	0	0	21	8,020
Chippewa	35	0	78	0	449	139	25	2	0	0	4,512
Delta	132	0	500	0	749	410	20	0	0	18	9,998
Luce	146	0	94	0	1,183	339	64	0	0	2	6,401
Mackinac	24	0	156	0	389	93	15	0	0	2	3,480
Menominee	195	0	807	0	712	357	74	0	0	39	10,881
Schoolcraft	182	0	132	0	944	239	36	0	0	3	6,322
Total	1,031	0	2,042	0	6,380	2,166	283	2	0	85	49,614
WESTERN UPPER PENINSULA											
Baraga	253	0	364	0	1,525	358	21	0	0	28	6,943
Dickinson	123	0	445	0	514	231	73	0	0	22	7,617
Gogebic	173	0	281	0	894	166	6	0	0	27	8,835
Houghton	200	0	157	0	1,317	249	280	0	0	17	4,829
Iron	475	0	836	0	1,585	445	16	0	0	74	12,563
Keweenaw	25	0	10	0	185	84	149	0	0	0	1,034
Marquette	313	0	384	0	2,183	453	152	0	0	12	11,923
Ontonagon	184	0	253	0	953	342	9	0	0	28	9,596
Total	1,746	0	2,730	0	9,156	2,328	706	0	0	208	63,340
NORTHERN LOWER PENINSULA											
Alcona	0	0	0	0	40	216	1,133	169	10	1	4,674
Alpena	0	0	0	0	14	261	79	7	0	0	2,822
Antrim	0	0	123	0	208	70	37	11	0	0	1,388
Arenac	0	3	14	0	2	29	65	11	0	2	393
Bay	0	7	0	0	3	6	19	4	0	0	51
Benzie	0	0	1	0	80	248	142	7	0	21	1,237
Charlevoix	0	0	99	0	182	46	0	0	0	0	724
Cheboygan	0	0	36	0	182	485	20	1	0	0	4,429
Clare	0	24	0	3	118	417	1,220	109	0	12	4,544
Crawford	0	8	5	0	214	95	575	21	0	3	2,290
Emmet	0	0	100	0	252	132	9	4	0	0	1,768
Gladwin	0	2	0	0	61	153	235	9	0	0	1,677
Grand Traverse	0	0	1	0	20	75	13	7	0	6	878
Iosco	0	0	0	0	18	71	186	38	0	0	1,926
Isabella	0	2	9	4	16	107	210	61	0	1	875
Kalkaska	0	0	9	0	68	176	407	109	0	3	2,520
Lake	0	0	2	0	91	744	2,260	147	0	17	5,445
Leelanau	0	0	0	0	36	21	24	7	0	9	267
Manistee	0	0	5	0	78	422	354	67	0	18	1,914
Mason	0	0	1	0	93	325	606	42	0	23	1,880
Mecosta	0	3	0	2	137	165	613	88	0	4	2,429
Midland	0	137	1	0	38	224	162	48	0	0	1,649
Missaukee	0	0	24	0	27	107	373	96	0	3	1,610
Montmorency	4	0	26	0	99	279	497	78	0	13	6,540
Newaygo	0	0	0	1	75	225	1,255	332	0	8	3,229
Oceana	0	0	5	0	122	92	444	169	0	34	1,880
Ogemaw	0	0	5	0	61	111	617	125	0	7	3,127
Osceola	0	2	13	0	163	198	814	97	0	7	3,386
Oscoda	0	0	0	0	155	110	516	103	0	7	4,255
Otsego	2	0	13	0	99	76	116	23	0	13	2,182
Presque Isle	0	0	13	0	60	176	115	12	0	0	2,829
Roscommon	0	0	0	0	56	176	1,109	58	0	45	4,133
Wexford	0	0	16	0	126	399	421	29	0	12	3,445
Total	6	188	521	10	2,994	6,437	14,646	2,089	10	269	82,396

(Table 4 continued on next page)

(Table 4 continued)

SOUTHERN LOWER PENSINSULA

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
Allegan	0	0	0	0	86	88	396	148	23	67	1,140
Barry	0	4	4	4	175	155	548	200	28	110	1,436
Berrien	2	20	0	4	46	43	112	45	0	20	356
Branch	0	9	0	2	30	28	74	44	3	1	226
Calhoun	0	5	4	5	88	166	344	197	5	80	1,022
Cass	2	5	1	14	51	54	316	157	5	19	695
Clinton	0	3	8	0	28	107	186	21	0	44	506
Eaton	0	4	11	4	87	188	252	78	4	90	827
Genessee	0	10	0	0	18	34	44	17	0	0	143
Gratiot	0	12	0	0	56	120	81	69	0	3	433
Hillsdale	0	12	0	5	38	68	149	63	8	4	409
Huron	0	60	0	0	74	88	110	56	0	0	624
Ingham	0	0	0	0	63	132	181	120	2	1	570
Ionia	0	5	8	0	194	293	573	149	0	105	1,547
Jackson	0	10	4	10	113	212	381	227	8	22	1,132
Kalamazoo	0	0	0	0	6	3	7	3	1	1	23
Kent	0	0	0	1	229	244	1,044	301	0	91	2,313
Lapeer	0	10	0	0	8	24	21	29	0	1	111
Lenawee	3	6	0	6	6	48	95	50	2	2	280
Macomb	0	0	0	0	0	0	9	14	0	0	23
Monroe	0	44	2	7	7	39	99	67	2	2	302
Montcalm	0	0	9	0	168	230	595	199	0	35	1,980
Muskegon	0	0	0	1	11	23	295	95	5	3	1,006
Oakland	0	18	0	0	15	71	141	78	0	0	390
Ottawa	0	0	0	0	3	0	13	4	0	0	343
Saginaw	0	32	0	0	42	116	123	62	0	0	505
St. Clair	0	3	0	0	24	52	97	119	0	0	333
St. Joseph	0	5	1	9	61	70	186	53	0	5	442
Sanilac	0	31	0	0	33	53	69	41	0	0	363
Shiawassee	0	8	0	0	15	18	17	17	0	0	91
Tuscola	0	32	0	0	20	28	34	29	0	4	353
Van Buren	2	12	0	1	96	51	232	96	0	8	570
Washtenaw	0	11	2	28	7	68	166	88	3	3	458
Wayne	0	1	1	1	0	0	1	1	0	0	6
Total	9	372	55	102	1,898	2,914	6,991	2,937	99	721	20,958
State total	2,792	560	5,348	112	20,428	13,845	22,626	5,028	109	1,283	216,308

Table 5.--Timber removals from growing stock on commercial forest land for industrial roundwood by species, unit, and county in Michigan, 1977

(In thousand cubic feet)

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
EASTERN UPPER PENINSULA														
Alger	44	235	796	866	196	465	131	8	52	522	7	41	1,026	236
Chippewa	135	329	161	978	174	161	504	11	64	827	21	82	101	133
Delta	647	1,441	442	470	252	388	472	24	69	2,795	293	69	58	459
Luce	40	336	420	1,307	311	336	229	4	37	491	31	18	756	123
Mackinac	119	437	132	205	107	91	206	4	40	888	150	48	150	157
Menominee	1,261	1,267	237	19	99	235	548	60	233	3,800	316	111	47	374
Schoolcraft	169	421	305	885	352	289	333	8	29	894	187	15	540	203
Total	2,415	4,466	2,493	4,730	1,491	1,965	2,423	119	524	10,217	1,005	384	2,678	1,685
WESTERN UPPER PENINSULA														
Baraga	84	507	568	221	168	182	184	18	20	1,813	0	55	0	432
Dickinson	208	399	111	156	110	186	176	29	93	4,128	86	137	12	288
Gogebic	22	608	659	104	530	540	305	5	100	4,318	0	99	0	266
Houghton	50	203	295	110	197	187	305	2	61	965	0	124	0	154
Iron	55	1,226	431	332	478	615	729	33	63	4,590	50	125	0	282
Keweenaw	48	3	72	6	179	159	33	0	3	6	0	2	0	87
Marquette	118	894	661	1,574	319	732	578	18	51	1,956	260	58	188	738
Ontonagon	26	379	363	78	551	552	301	3	99	5360	0	111	0	284
Total	611	4,219	3,160	2,581	2,532	3,153	2,611	108	490	23,136	396	711	200	2,531
NORTHERN LOWER PENINSULA														
Alcona	5	4	0	91	44	25	4	0	35	2,699	8	12	6	139
Alpena	390	278	0	701	103	3	5	0	56	846	3	11	5	96
Antrim	4	1	9	50	71	4	0	0	85	403	0	298	67	15
Arenac	0	0	0	0	17	0	0	0	5	241	0	2	0	19
Bay	0	0	0	0	0	0	0	0	8	2	0	3	0	0
Benzie	0	0	0	0	37	7	0	0	57	495	0	55	49	31
Charlevoix	0	0	2	0	83	0	0	0	2	192	0	136	4	0
Cheboygan	38	10	0	236	70	64	3	0	88	2,858	3	117	60	140
Clare	1	0	0	251	31	19	0	0	66	2,171	0	47	19	35
Crawford	0	0	0	372	116	95	0	0	9	750	0	21	11	12
Emmet	0	0	2	52	32	3	0	0	84	856	0	176	59	68
Gladwin	0	0	0	16	1	0	0	0	12	1,087	0	12	0	106
Grand Traverse	0	0	6	142	63	63	0	0	58	371	0	21	8	9
Iosco	26	0	0	824	192	108	2	0	34	365	0	3	0	2
Isabella	12	0	0	0	3	11	0	0	36	352	0	22	21	15
Kalkaska	0	1	10	278	147	47	0	0	7	1,134	0	30	21	30
Lake	0	0	0	370	11	4	0	0	58	1,575	0	57	31	10
Leelanau	0	0	5	0	2	0	0	0	25	72	0	25	37	4
Manistee	0	0	0	0	147	9	0	0	55	625	0	35	55	20
Mason	0	0	0	0	11	4	0	0	25	670	0	24	25	26
Mecosta	1	0	0	0	186	7	0	0	81	1,059	0	34	19	10
Midland	0	0	0	0	18	0	0	0	47	908	0	55	3	55
Missaukee	0	0	0	95	45	42	0	0	3	711	0	4	29	54
Montmorency	133	62	0	1,486	235	70	7	0	34	3,225	5	79	27	179
Newaygo	0	0	0	0	420	6	0	0	50	756	0	22	8	8
Oceana	0	0	11	0	224	21	0	0	50	574	0	38	51	5
Ogemaw	0	0	0	432	52	100	0	0	20	1,540	0	12	14	72
Osceola	11	0	24	3	173	35	7	0	34	1,628	0	82	58	41
Oscoda	0	7	0	1,393	268	44	3	0	15	1,553	2	4	4	62
Otsego	4	8	0	468	35	25	2	0	15	1,099	0	47	7	106
Presque Isle	226	170	4	278	10	52	10	0	21	1,382	5	66	14	188
Roscommon	0	0	0	738	46	87	0	0	0	1,708	0	18	0	52
Wexford	34	0	28	753	699	22	22	0	31	532	0	85	73	11
Total	885	541	101	9,029	3,592	977	65	0	1,206	34,439	26	1,653	785	1,620

(Table 5 continued on next page)

(Table 5 continued)

SOUTHERN LOWER PENINSULA

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
Allegan	0	0	0	83	86	11	0	0	101	36	0	6	0	1
Barry	0	0	0	0	17	0	0	0	119	13	0	65	17	0
Berrien	0	0	0	0	0	0	0	0	31	14	0	13	15	0
Branch	0	0	0	0	0	0	0	0	22	0	0	9	9	0
Calhoun	0	0	0	0	7	0	0	0	90	4	0	37	7	0
Cass	0	0	0	0	0	0	0	0	32	1	0	23	25	0
Clinton	0	0	0	0	0	0	0	0	63	0	0	22	36	0
Eaton	0	0	0	0	0	0	0	0	77	4	0	29	13	0
Genessee	0	0	0	0	0	0	0	0	12	0	0	12	0	0
Gratiot	0	0	0	0	0	0	0	0	22	46	0	21	4	0
Hillsdale	0	0	0	0	0	0	0	0	45	0	0	19	7	0
Huron	0	0	0	0	0	0	0	0	162	91	0	8	0	0
Ingham	0	0	0	0	0	0	0	0	39	0	0	44	0	0
Ionia	0	0	0	0	0	0	0	0	171	0	0	36	40	0
Jackson	0	0	0	0	0	0	0	0	85	4	0	68	7	0
Kalamazoo	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Kent	0	0	0	0	29	4	0	0	192	90	0	58	37	0
Lapeer	0	0	0	0	0	0	0	0	8	2	0	10	0	0
Lenawee	0	0	0	0	0	0	0	0	47	0	0	18	4	0
Macomb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe	0	0	0	0	0	0	0	0	22	0	0	13	3	0
Montcalm	0	0	0	0	121	0	0	0	112	366	0	89	47	11
Muskegon	0	0	0	0	262	23	0	0	0	241	0	2	0	1
Oakland	0	0	0	0	0	0	0	0	69	0	0	7	0	0
Ottawa	0	0	0	0	272	2	0	0	0	1	0	0	11	0
Saginaw	0	0	0	0	3	0	0	0	74	20	0	46	0	0
St. Clair	0	0	0	0	0	0	0	0	32	0	0	12	0	0
St. Joseph	0	0	0	0	0	0	0	0	23	2	0	16	18	0
Sanilac	0	0	0	0	0	0	0	0	100	51	0	0	0	0
Shiawassee	0	0	0	0	0	0	0	0	9	0	0	9	0	0
Tuscola	0	0	0	0	1	0	0	0	47	166	0	8	0	0
Van Buren	0	0	0	0	0	2	0	0	46	9	0	12	12	0
Washtenaw	0	0	0	0	8	0	0	0	48	0	0	27	8	0
Wayne	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	83	806	42	0	0	1,900	1,161	0	741	320	13
State total	3,911	9,226	5,754	16,423	8,421	6,137	5,099	227	4,120	68,953	1,427	3,489	3,983	5,849

(Table 5 continued on next page)

(Table 5 continued)

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
EASTERN UPPER PENINSULA											
Alger	329	0	298	0	2,070	596	52	0	0	23	7,993
Chippewa	34	0	86	0	465	147	28	2	0	0	4,443
Delta	102	0	530	0	629	371	17	0	0	16	9,544
Luce	157	0	103	0	1,256	366	70	0	0	2	6,393
Mackinac	26	0	173	0	410	95	17	0	0	2	3,457
Menominee	171	0	807	0	616	338	75	0	0	34	10,648
Schoolcraft	190	0	140	0	983	252	38	0	0	3	6,236
Total	1,009	0	2,137	0	6,429	2,165	297	2	0	80	48,714
WESTERN UPPER PENINSULA											
Baraga	209	0	377	0	1,449	339	21	0	0	25	6,672
Dickinson	109	0	475	0	439	227	74	0	0	22	7,465
Gogebic	137	0	288	0	874	165	7	0	0	25	9,052
Houghton	184	0	156	0	1,371	266	290	0	0	15	4,935
Iron	378	0	851	0	1,372	416	15	0	0	68	12,109
Keweenaw	28	0	8	0	192	96	156	0	0	0	1,078
Marquette	291	0	407	0	2,204	440	160	0	0	11	11,658
Ontonagon	147	0	257	0	927	328	10	0	0	25	9,801
Total	1,483	0	2,819	0	8,828	2,277	733	0	0	191	62,770
NORTHERN LOWER PENINSULA											
Alcona	0	0	0	0	39	196	986	156	11	1	4,461
Alpena	0	0	0	0	11	239	70	7	0	0	2,824
Antrim	0	0	138	0	229	77	38	13	0	0	1,502
Arenac	0	4	16	0	2	33	67	13	0	2	421
Bay	0	8	0	0	3	7	20	4	0	0	55
Benzie	0	0	1	0	84	231	136	6	0	24	1,213
Charlevoix	0	0	112	0	202	52	0	0	0	0	785
Cheboygan	0	0	43	0	193	453	16	1	0	0	4,393
Clare	0	28	0	3	118	403	1,127	104	0	11	4,434
Crawford	0	9	6	0	236	87	530	21	0	3	2,278
Emmet	0	0	113	0	278	139	10	4	0	0	1,876
Gladwin	0	2	0	0	66	158	226	8	0	0	1,694
Grand trav	0	0	1	0	19	71	13	7	0	6	858
Iosco	0	0	0	0	21	68	185	39	0	0	1,869
Isabella	0	2	10	4	14	117	194	58	0	1	872
Kalkaska	0	0	10	0	73	161	386	110	0	3	2,448
Lake	0	0	2	0	93	704	2,100	141	0	16	5,172
Leelanau	0	0	0	0	37	21	19	6	0	7	260
Manistee	0	0	6	0	75	397	318	61	0	18	1,821
Mason	0	0	1	0	100	308	557	41	0	23	1,815
Mecosta	0	4	0	2	146	182	593	88	0	5	2,417
Midland	0	156	1	0	42	232	160	49	0	0	1,726
Missaukee	0	0	28	0	30	103	348	98	0	3	1,593
Montmorency	4	0	30	0	109	263	436	73	0	15	6,472
Newaygo	0	0	0	1	77	242	1,221	328	0	9	3,148
Oceana	0	0	5	0	108	94	421	160	0	35	1,797
Ogemaw	0	0	6	0	66	113	586	119	0	8	3,140
Osceola	0	2	15	0	176	208	802	94	0	8	3,401
Oscoda	0	0	0	0	167	100	484	101	0	6	4,213
Otsego	2	0	15	0	109	68	119	24	0	15	2,168
Presque Isle	0	0	15	0	66	167	99	10	0	0	2,783
Roscommon	0	0	0	0	63	177	1,057	59	0	51	4,056
Wexford	0	0	18	0	134	364	351	26	0	11	3,194
Total	6	215	592	10	3,186	6,235	13,675	2,029	11	281	81,159

(Table 5 continued on next page)

(Table 5 continued)

SOUTHERN LOWER PENINSULA

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
Allegan	0	0	0	0	95	101	403	153	26	76	1,178
Barry	0	5	5	4	193	175	567	206	32	124	1,542
Berrien	2	23	0	5	51	51	116	46	0	23	390
Branch	0	10	0	2	34	32	79	46	3	1	247
Calhoun	0	6	5	5	99	189	356	204	6	91	1,106
Cass	2	6	1	16	57	61	329	163	5	22	743
Clinton	0	3	9	0	31	121	192	22	0	49	548
Eaton	0	5	13	4	96	214	259	80	4	103	901
Genessee	0	12	0	0	21	39	45	19	0	0	160
Gratiot	0	14	0	0	57	130	77	67	0	3	441
Hillsdale	0	14	0	6	42	77	157	66	9	5	447
Huron	0	68	0	0	81	100	114	58	0	0	682
Ingham	0	0	0	0	69	149	186	124	2	1	614
Ionia	0	6	9	0	213	332	593	154	0	119	1,673
Jackson	0	12	5	11	124	241	394	234	9	25	1,219
Kalamazoo	0	0	0	0	7	3	8	3	1	1	25
Kent	0	0	0	1	230	255	1,034	284	0	100	2,314
Lapeer	0	12	0	0	9	28	22	30	0	1	122
Lenawee	3	7	0	7	7	54	98	52	2	2	301
Macomb	0	0	0	0	0	0	10	15	0	0	25
Monroe	0	50	2	8	8	45	101	69	2	2	325
Montcalm	0	0	10	0	170	234	552	173	0	37	1,922
Muskegon	0	0	0	1	12	26	296	96	6	3	969
Oakland	0	21	0	0	17	81	145	80	0	0	420
Ottawa	0	0	0	0	3	0	15	4	0	0	308
Saginaw	0	37	0	0	46	132	128	66	0	0	552
St. Clair	0	4	0	0	26	59	99	123	0	0	355
St. Joseph	0	6	1	10	66	79	193	55	0	6	475
Sanilac	0	36	0	0	36	60	71	42	0	0	396
Shiawassee	0	9	0	0	17	21	19	19	0	0	103
Tuscola	0	37	0	0	22	32	34	30	0	5	382
Van Buren	2	14	0	1	106	58	241	100	0	9	612
Washtenaw	0	13	2	31	8	77	171	92	3	3	491
Wayne	0	0	0	0	0	0	0	0	0	0	0
Total	9	430	62	112	2,053	3,256	7,104	2,975	110	811	21,988
State total	2,507	645	5,610	122	20,496	13,933	21,809	5,006	121	1,363	214,631

Table 6.--Timber removals from sawtimber on commercial forest land for industrial roundwood by species, unit, and county in Michigan, 1977

(In thousand board feet)[1/]

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
EASTERN UPPER PENINSULA														
Alger	135	633	2,871	1,875	586	2,380	409	22	215	874	10	185	5,320	501
Chippewa	453	889	429	2,116	694	783	1,491	29	308	2,169	101	416	504	409
Delta	1,451	3,533	1,120	1,017	664	1,824	1,280	64	115	4,684	428	307	172	941
Luce	143	909	1,072	3,104	1,526	1,789	662	10	169	1,729	47	79	4,032	377
Mackinac	404	1,180	378	445	431	413	820	9	178	2,018	325	248	704	364
Menominee	3,031	2,780	734	42	315	1,208	1,501	163	401	7,612	462	555	211	1,007
Schoolcraft	535	1,140	784	2,053	1,628	1,454	909	23	101	1,465	273	73	2,921	419
Total	6,152	11,064	7,388	10,652	5,844	9,851	7,072	320	1,487	20,551	1,646	1,863	13,864	4,018
WESTERN UPPER PENINSULA														
Baraga	239	1,368	1,774	478	425	637	526	47	48	3,148	0	200	0	1,707
Dickinson	665	1,074	346	610	569	1,031	508	78	189	7,680	126	680	55	686
Gogebic	59	2,203	2,415	225	2,869	3,006	1,389	14	532	19,343	0	523	0	1,227
Houghton	215	688	1,204	238	999	1,033	1,386	5	288	3,443	1	659	0	616
Iron	147	3,445	1,264	855	1,873	3,274	2,172	88	154	10,752	72	620	0	735
Keweenaw	203	6	373	13	1,022	913	151	0	7	20	0	14	0	442
Marquette	349	2,408	2,663	3,625	1,078	3,775	1,671	48	119	3,752	379	287	1,035	2,104
Ontonagon	102	1,590	1,202	253	3,046	3,131	1,402	7	481	21,144	0	536	0	1,351
Total	1,979	12,782	11,241	6,297	11,881	16,800	9,205	287	1,818	69,282	578	3,519	1,090	8,868
NORTHERN LOWER PENINSULA														
Alcona	7	20	0	382	251	147	20	0	63	6,017	11	38	25	232
Alpena	588	390	0	3,270	584	20	23	0	103	1,750	4	38	14	208
Antrim	14	5	53	240	405	25	2	0	435	1,406	0	1,542	367	65
Arenac	0	0	0	0	98	0	0	0	27	1,012	0	11	0	77
Bay	0	0	0	0	0	0	0	0	44	14	0	17	0	0
Benzie	0	0	0	0	138	42	0	0	236	936	0	232	254	46
Charlevoix	0	0	14	0	327	0	0	0	10	844	0	730	22	0
Cheboygan	118	30	0	512	194	367	11	0	210	7,255	4	596	307	265
Clare	1	0	0	598	178	107	0	0	251	5,877	0	187	55	76
Crawford	0	0	0	1,099	642	532	0	0	15	2,870	0	95	47	39
Emmet	0	0	14	112	172	7	0	0	431	3,113	0	936	326	213
Gladwin	0	0	0	36	5	0	0	0	56	3,253	0	56	1	319
Grand Traverse	0	0	39	306	365	365	0	0	291	648	0	97	31	13
Iosco	128	0	0	1,788	932	615	8	0	168	1,486	0	5	0	2
Isabella	15	0	0	0	6	67	0	0	178	654	0	110	118	67
Kalkaska	0	2	60	667	485	259	0	0	11	2,653	0	114	85	86
Lake	0	0	0	801	67	21	0	0	188	2,993	0	183	109	13
Leelanau	0	0	30	0	14	1	0	0	76	137	0	76	192	6
Manistee	0	0	0	0	458	57	0	0	203	1,481	0	121	258	31
Mason	0	0	0	0	56	21	0	0	118	1,372	0	109	125	40
Mecosta	3	0	0	0	465	40	0	0	388	2,377	0	167	97	22
Midland	0	0	0	0	106	0	0	0	223	3,373	0	260	7	228
Missaukee	1	1	3	211	113	235	0	0	7	2,173	0	10	149	182
Montmorency	205	115	0	5,590	1,280	371	21	0	114	7,824	7	429	145	409
Newaygo	0	0	0	0	1,051	35	0	0	227	1,655	0	110	37	11
Oceana	1	0	66	0	568	124	0	0	136	1,526	0	161	221	7
Ogemaw	0	0	0	995	288	574	0	0	68	6,144	0	56	65	306
Osceola	54	0	140	18	484	200	35	0	167	4,212	0	412	305	135
Oscoda	0	21	0	5,042	1,486	229	6	0	21	4,237	2	9	10	113
Otsego	14	25	0	1,105	155	123	9	0	76	2,996	0	273	35	247
Presque Isle	323	304	10	603	26	283	28	0	53	3,180	7	354	78	342
Roscommon	1	1	3	1,687	244	505	0	0	2	4,857	0	95	2	188
Wexford	162	1	167	1,660	1,869	120	108	0	127	1,206	0	412	390	17
Total	1,635	915	599	26,722	13,512	5,492	271	0	4,723	91,531	35	8,041	3,877	4,005

(Table 6 continued on next page)

(Table 6 continued)

SOUTHERN LOWER PENINSULA

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
Allegan	0	0	0	180	216	65	0	0	520	70	0	31	0	1
Barry	0	0	0	0	42	0	0	0	610	47	0	331	97	0
Berrien	0	0	0	0	0	0	0	0	163	68	0	68	84	0
Branch	0	0	0	0	0	0	0	0	113	1	0	47	52	0
Calhoun	0	0	0	0	17	0	0	0	460	18	0	197	39	0
Cass	0	0	0	0	0	0	0	0	164	3	0	114	141	0
Clinton	0	0	0	0	0	0	0	0	325	0	0	110	194	0
Eaton	0	0	0	0	0	0	0	0	392	18	0	148	78	0
Genessee	0	0	0	0	0	0	0	0	61	1	0	62	0	0
Gratiot	0	0	0	0	0	0	0	0	75	82	0	104	11	0
Hillsdale	0	0	0	0	0	0	0	0	229	0	0	97	35	0
Huron	0	0	0	0	0	0	0	0	832	416	0	41	0	0
Ingham	0	0	0	0	0	0	0	0	205	3	0	223	3	0
Ionia	0	0	0	0	0	0	0	0	876	0	0	185	222	0
Jackson	0	0	0	0	0	0	0	0	437	18	0	352	39	0
Kalamazoo	0	0	0	0	0	0	0	0	0	0	0	10	0	0
Kent	0	0	0	0	89	23	0	0	802	195	0	292	164	0
Lapeer	0	0	0	0	0	0	0	0	43	13	0	55	0	0
Lenawee	0	0	0	0	0	0	0	0	239	0	0	91	25	0
Macomb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe	0	0	0	0	0	0	0	0	113	0	0	68	18	0
Montcalm	0	0	0	0	417	0	0	0	450	839	0	454	228	60
Muskegon	0	0	0	0	653	135	0	0	3	390	0	14	1	2
Oakland	0	0	0	0	0	0	0	0	358	0	0	35	0	0
Ottawa	0	0	0	0	680	13	0	0	0	2	0	3	65	0
Saginaw	0	0	0	0	9	0	0	0	378	53	0	237	0	0
St.Clair	0	0	0	0	0	0	0	0	166	0	0	61	0	0
St.Joseph	0	0	0	0	0	0	0	0	115	11	0	82	99	0
Sanilac	0	0	0	0	0	0	0	0	514	233	0	0	0	0
Shiawassee	0	0	0	0	0	0	0	0	51	0	0	51	0	0
Tuscola	0	0	0	0	7	0	0	0	239	761	0	44	0	0
Van Buren	0	0	0	0	0	12	0	0	237	42	0	64	70	0
Washtenaw	0	0	0	0	19	0	0	0	249	0	0	137	44	0
Wayne	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	180	2,149	248	0	0	9,419	3,284	0	3,808	1,709	63
State total	9,766	24,761	19,228	43,851	33,386	32,391	16,548	607	17,447	184,648	2,259	17,231	20,540	16,954

(Table 6 continued on next page)

(Table 6 continued)

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
EASTERN UPPER PENINSULA											
Alger	1,972	0	1,375	0	11,622	2,079	293	0	0	100	33,457
Chippewa	189	0	418	0	2,490	562	153	11	0	3	14,617
Delta	397	0	2,195	0	2,679	603	20	0	0	41	23,535
Luce	998	0	481	0	7,006	1,589	413	0	0	4	26,139
Mackinac	161	0	838	0	2,257	297	103	0	0	5	11,578
Menominee	780	0	2,665	0	2,712	800	361	0	0	53	27,393
Schoolcraft	1,161	0	591	0	5,445	1,021	185	0	0	7	22,188
Total	5,658	0	8,563	0	34,211	6,951	1,528	11	0	213	158,907
WESTERN UPPER PENINSULA											
Baraga	919	0	1,437	0	7,206	819	80	0	0	39	21,097
Dickinson	509	0	2,055	0	1,909	655	351	0	0	72	19,848
Gogebic	579	0	1,060	0	4,519	532	36	0	0	50	40,581
Houghton	922	0	504	0	7,430	1,132	1,505	0	0	24	22,292
Iron	1,505	0	3,063	0	6,059	940	51	0	0	119	37,188
Keweenaw	189	0	18	0	1,038	469	836	0	0	2	5,716
Marquette	1,509	0	1,667	0	11,654	1,285	853	0	0	19	40,280
Ontonagon	634	0	902	0	4,777	848	54	0	0	51	41,511
Total	6,766	0	10,706	0	44,592	6,680	3,766	0	0.	376	228,513
NORTHERN LOWER PENINSULA											
Alcona	0	0	0	0	198	326	1,673	461	60	2	9,933
Alpena	0	0	0	0	37	441	156	4	0	0	7,630
Antrim	0	0	707	0	1,334	361	198	66	0	0	7,225
Arenac	0	20	82	0	11	158	348	66	0	16	1,926
Bay	0	42	0	0	17	34	104	24	0	0	296
Benzie	0	0	9	0	467	511	485	3	0	107	3,466
Charlevoix	0	0	572	0	1,177	262	0	0	0	0	3,958
Cheboygan	0	0	217	0	1,085	997	18	1	0	0	12,187
Clare	0	143	0	19	609	1,139	3,340	383	0	16	12,979
Crawford	0	65	29	0	1,327	148	1,523	63	0	7	8,501
Emmet	0	0	582	0	1,617	568	51	25	0	0	8,167
Gladwin	0	15	2	0	377	589	851	13	0	0	5,573
Grand Traverse	0	0	9	0	96	159	36	17	0	21	2,493
Iosco	0	0	0	0	117	157	812	185	0	0	6,403
Isabella	0	10	58	25	72	529	596	223	0	4	2,732
Kalkaska	0	0	57	0	401	271	1,370	504	0	5	7,030
Lake	0	0	10	3	489	1,698	6,535	521	0	60	13,691
Leelanau	0	0	0	0	191	50	10	3	0	11	797
Manistee	0	0	30	0	370	920	735	185	0	65	4,914
Mason	0	0	7	1	549	746	1,563	182	0	87	4,976
Mecosta	0	20	0	12	815	845	2,362	409	0	24	8,046
Midland	0	796	5	0	240	893	707	259	0	0	7,097
Missaukee	0	0	143	0	171	232	1,101	458	0	5	5,195
Montmorency	23	0	153	0	644	590	769	256	0	76	19,021
Newaygo	0	0	0	8	412	1,070	4,924	1,398	0	43	10,981
Oceana	0	0	31	0	500	385	1,462	562	0	146	5,896
Ogemaw	0	0	30	0	375	378	2,090	428	0	30	11,827
Osceola	0	10	76	1	982	858	3,427	383	0	43	11,942
Oscoda	2	0	0	0	937	145	1,575	439	0	9	14,283
Otsego	15	0	76	0	656	99	575	123	0	76	6,678
Presque Isle	0	0	76	0	392	444	127	5	0	0	6,635
Roscommon	1	0	0	0	355	598	3,759	286	0	259	12,843
Wexford	0	0	90	0	739	633	242	40	0	23	8,006
Total	41	1,121	3,051	69	17,759	17,234	43,524	7,975	60	1,135	253,327

(Table 6 continued on next page)

(Table 6 continued)

SOUTHERN LOWER PENINSULA

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
Allegan	0	0	0	3	546	497	1,978	773	185	391	5,456
Barry	0	23	23	24	1,111	897	2,953	1,080	223	642	8,103
Berrien	13	141	1	30	305	272	607	239	0	124	2,115
Branch	0	56	0	14	191	170	429	250	20	7	1,350
Calhoun	0	30	23	30	559	969	1,859	1,090	39	471	5,801
Cass	14	29	6	88	332	313	1,768	869	29	115	3,985
Clinton	0	18	47	0	176	621	997	111	5	251	2,855
Eaton	0	24	70	22	556	1,099	1,346	416	27	525	4,721
Genessee	0	64	0	0	121	204	235	94	0	0	842
Gratiot	0	71	0	0	307	594	321	301	0	4	1,870
Hillsdale	0	71	0	32	243	396	881	358	55	28	2,425
Huron	0	349	0	0	458	512	593	305	0	0	3,506
Ingham	0	0	0	0	390	767	966	646	11	10	3,224
Ionia	0	33	47	1	1,219	1,702	3,083	798	2	614	8,782
Jackson	0	64	23	62	709	1,232	2,049	1,230	51	130	6,396
Kalamazoo	0	0	0	2	39	18	52	21	7	11	160
Kent	0	0	0	11	1,203	1,005	4,556	991	3	460	9,794
Lapeer	0	64	0	0	51	144	115	153	0	9	647
Lenawee	21	40	0	39	37	274	508	267	12	12	1,565
Macomb	0	0	0	0	0	0	52	78	0	0	130
Monroe	0	255	14	43	48	226	526	355	10	10	1,686
Montcalm	0	0	58	4	906	849	1,730	303	3	140	6,441
Muskegon	0	0	0	7	71	115	1,374	464	42	21	3,292
Oakland	0	102	0	0	101	413	752	420	0	0	2,181
Ottawa	0	0	0	1	21	0	85	29	1	2	902
Saginaw	0	194	0	0	263	673	637	369	0	0	2,813
St. Clair	0	21	0	0	152	299	513	641	0	0	1,853
St. Joseph	0	29	4	55	374	429	1,032	284	0	31	2,545
Sanilac	0	185	0	0	202	309	369	215	0	0	2,027
Shiawassee	0	51	0	0	101	102	94	94	0	0	544
Tuscola	0	194	0	0	128	170	179	154	0	23	1,899
Van Buren	14	78	3	9	599	297	1,286	527	2	48	3,288
Washtenaw	0	67	14	172	45	395	892	475	19	19	2,547
Wayne	0	0	0	0	0	0	0	0	0	0	0
Total	62	2,253	333	649	11,564	15,963	34,817	14,400	746	4,098	105,745
State total	12,527	3,374	22,653	718	108,126	46,828	83,635	22,386	806	5,822	746,492

1/ International 1/4-inch rule.

Table 7.--Logging residue generated during industrial roundwood production by species, unit, and county in Michigan, 1977

(In thousand cubic feet)

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
EASTERN UPPER PENINSULA														
Alger	14	69	286	256	69	156	40	2	13	114	1	11	318	54
Chippewa	39	94	61	287	61	55	154	3	17	189	6	22	35	33
Delta	120	381	167	137	88	132	136	7	16	606	68	18	34	106
Luce	12	97	159	397	102	111	68	1	10	118	7	4	221	28
Mackinac	37	127	49	60	38	31	75	1	9	197	37	13	54	38
Menominee	267	300	87	5	33	79	159	17	57	841	75	29	19	89
Schoolcraft	27	121	116	265	112	96	95	2	8	193	45	4	155	46
Total	516	1,189	925	1,407	503	660	727	33	130	2,258	239	101	836	394
WESTERN UPPER PENINSULA														
Baraga	25	147	210	65	65	60	54	6	3	396	0	14	0	110
Dickinson	60	117	42	60	36	60	53	8	21	905	19	37	6	66
Gogebic	6	211	237	31	175	177	123	1	24	908	0	25	0	68
Houghton	18	68	104	32	67	61	122	0	15	230	0	31	0	39
Iron	16	367	160	103	168	204	225	10	16	994	12	33	0	70
Keweenaw	5	1	23	3	58	51	13	0	0	2	0	0	0	22
Marquette	36	260	234	474	110	243	175	5	12	430	63	14	50	181
Ontonagon	9	144	133	27	181	179	123	1	25	1136	0	26	0	74
Total	175	1,315	1,143	795	860	1,035	888	31	116	5,001	94	180	56	630
NORTHERN LOWER PENINSULA														
Alcona	1	1	0	35	14	8	1	0	8	603	2	3	3	33
Alpena	56	42	0	290	33	1	1	0	14	186	0	3	4	24
Antrim	0	0	3	21	23	1	0	0	22	97	0	76	18	3
Arenac	0	0	0	0	6	0	0	0	1	59	0	0	0	5
Bay	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Benzie	0	0	0	0	13	2	0	0	14	109	0	13	15	7
Charlevoix	0	0	1	0	28	0	0	0	0	48	0	34	0	0
Cheboygan	5	3	0	69	26	21	1	0	21	652	0	28	19	34
Clare	0	0	0	77	11	6	0	0	17	499	0	11	10	9
Crawford	0	0	0	123	37	31	0	0	2	183	0	6	5	3
Emmet	0	0	1	16	11	1	0	0	22	206	0	46	16	17
Gladwin	0	0	0	4	0	0	0	0	3	253	0	3	0	26
Grand Traverse	0	0	2	43	20	20	0	0	16	80	0	6	3	2
Iosco	12	0	0	242	65	34	1	0	9	91	0	1	0	0
Isabella	1	0	0	0	1	3	0	0	8	77	0	6	5	4
Kalkaska	0	0	3	86	54	15	0	0	1	256	0	8	10	6
Lake	0	0	0	109	3	1	0	0	14	347	0	15	16	2
Leelanau	0	0	1	0	1	0	0	0	5	16	0	5	12	1
Manistee	0	0	0	0	54	3	0	0	13	142	0	9	20	5
Mason	0	0	0	0	3	1	0	0	7	148	0	7	8	6
Mecosta	0	0	0	0	71	2	0	0	20	237	0	9	6	2
Midland	0	0	0	0	6	0	0	0	11	219	0	15	1	13
Missaukee	0	0	0	28	17	13	0	0	1	167	0	1	8	13
Montmorency	20	13	0	551	77	23	2	0	8	730	1	18	8	43
Newaygo	0	0	0	0	160	2	0	0	13	169	0	6	2	2
Oceana	0	0	3	0	85	7	0	0	11	128	0	7	21	1
Ogemaw	0	0	0	129	15	33	0	0	4	379	0	3	6	18
Osceola	4	0	8	1	60	11	3	0	8	371	0	21	17	11
Oscoda	0	2	0	506	88	13	1	0	3	358	0	0	1	15
Otsego	0	2	0	143	13	8	0	0	3	254	0	10	2	25
Presque Isle	31	32	2	82	4	17	3	0	4	305	1	16	3	45
Roscommon	0	0	0	221	11	27	0	0	0	395	0	5	0	13
Wexford	14	0	9	222	263	7	9	0	8	119	0	22	21	3
Total	144	95	33	2,998	1,273	311	22	0	293	7,883	4	413	260	391

(Table 7 continued on next page)

(Table 7 continued)

SOUTHERN LOWER PENINSULA

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
Allegan	0	0	0	25	30	3	0	0	27	8	0	2	0	1
Barry	0	0	0	0	7	0	0	0	32	3	0	17	5	0
Berrien	0	0	0	0	0	0	0	0	8	3	0	3	4	0
Branch	0	0	0	0	0	0	0	0	6	0	0	2	3	0
Calhoun	0	0	0	0	2	0	0	0	24	1	0	9	2	0
Cass	0	0	0	0	0	0	0	0	8	0	0	6	7	0
Clinton	0	0	0	0	0	0	0	0	16	0	0	6	9	0
Eaton	0	0	0	0	0	0	0	0	21	1	0	8	3	0
Genessee	0	0	0	0	0	0	0	0	3	0	0	3	0	0
Gratiot	0	0	0	0	0	0	0	0	5	9	0	6	1	0
Hillsdale	0	0	0	0	0	0	0	0	11	0	0	5	2	0
Huron	0	0	0	0	0	0	0	0	42	22	0	2	0	0
Ingham	0	0	0	0	0	0	0	0	10	0	0	12	0	0
Ionia	0	0	0	0	0	0	0	0	46	0	0	10	11	0
Jackson	0	0	0	0	0	0	0	0	22	1	0	18	2	0
Kalamazoo	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kent	0	0	0	0	10	1	0	0	50	21	0	16	16	0
Lapeer	0	0	0	0	0	0	0	0	2	0	0	2	0	0
Lenawee	0	0	0	0	0	0	0	0	13	0	0	5	0	0
Macomb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe	0	0	0	0	0	0	0	0	6	0	0	3	0	0
Montcalm	0	0	0	0	44	0	0	0	29	83	0	24	17	2
Muskegon	0	0	0	0	99	8	0	0	0	51	0	0	0	0
Oakland	0	0	0	0	0	0	0	0	18	0	0	2	0	0
Ottawa	0	0	0	0	101	1	0	0	0	0	0	0	3	0
Saginaw	0	0	0	0	1	0	0	0	19	3	0	13	0	0
St. Clair	0	0	0	0	0	0	0	0	8	0	0	3	0	0
St. Joseph	0	0	0	0	0	0	0	0	6	0	0	5	5	0
Sanilac	0	0	0	0	0	0	0	0	27	13	0	0	0	0
Shiawassee	0	0	0	0	0	0	0	0	2	0	0	2	0	0
Tuscola	0	0	0	0	0	0	0	0	13	42	0	2	0	0
Van Buren	0	0	0	0	0	1	0	0	13	2	0	3	3	0
Washtenaw	0	0	0	0	2	0	0	0	13	0	0	8	3	0
Wayne	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	25	296	14	0	0	500	263	0	197	96	3
State total	835	2,599	2,101	5,225	2,932	2,020	1,637	64	1,039	15,405	337	891	1,248	1,418

(Table 7 continued on next page)

(Table 7 continued)

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
EASTERN UPPER PENINSULA											
Alger	82	0	76	0	624	153	10	0	0	6	2,354
Chippewa	10	0	21	0	154	39	5	0	0	0	1,285
Delta	49	0	137	0	279	89	3	0	0	2	2,575
Luce	33	0	26	0	384	95	13	0	0	0	1,886
Mackinac	6	0	44	0	129	24	3	0	0	0	972
Menominee	67	0	201	0	264	82	15	0	0	8	2,694
Schoolcraft	45	0	36	0	305	65	6	0	0	1	1,743
Total	292	0	541	0	2,139	547	55	0	0	17	13,509
WESTERN UPPER PENINSULA											
Baraga	86	0	97	0	534	82	4	0	0	6	1,964
Dickinson	41	0	123	0	190	58	14	0	0	5	1,921
Gogebic	60	0	72	0	304	40	1	0	0	6	2,469
Houghton	63	0	38	0	442	69	60	0	0	2	1,461
Iron	171	0	212	0	585	98	1	0	0	16	3,461
Keweenaw	6	0	1	0	62	26	32	0	0	0	305
Marquette	97	0	104	0	742	109	31	0	0	3	3,373
Ontonagon	63	0	65	0	324	80	3	0	0	5	2,598
Total	587	0	712	0	3,183	562	146	0	0	43	17,552
NORTHERN LOWER PENINSULA											
Alcona	0	0	0	0	13	47	212	33	3	0	1,020
Alpena	0	0	0	0	7	57	14	2	0	0	734
Antrim	0	0	37	0	65	20	9	4	0	0	399
Arenac	0	1	5	0	0	9	13	4	0	0	103
Bay	0	2	0	0	0	2	4	0	0	0	10
Benzie	0	0	0	0	27	57	29	1	0	6	293
Charlevoix	0	0	30	0	56	14	0	0	0	0	211
Cheboygan	0	0	12	0	58	110	2	0	0	0	1,061
Clare	0	8	0	0	41	99	238	22	0	3	1,051
Crawford	0	1	2	0	72	20	114	6	0	0	605
Emmet	0	0	30	0	78	37	2	0	0	0	483
Gladwin	0	0	0	0	19	39	47	1	0	0	395
Grand Traverse	0	0	0	0	8	17	2	1	0	1	221
Iosco	0	0	0	0	7	17	39	9	0	0	527
Isabella	0	0	2	0	5	28	40	12	0	0	192
Kalkaska	0	0	2	0	22	38	81	23	0	1	606
Lake	0	0	0	0	32	171	443	29	0	3	1,185
Leelanau	0	0	0	0	13	5	3	1	0	1	64
Manistee	0	0	2	0	27	96	68	13	0	4	456
Mason	0	0	0	0	32	76	119	8	0	6	421
Mecosta	0	1	0	0	45	49	124	18	0	1	585
Midland	0	42	0	0	12	59	34	9	0	0	421
Missaukee	0	0	8	0	9	26	73	21	0	1	386
Montmorenc	0	0	8	0	31	64	96	15	0	3	1,711
Newaygo	0	0	0	0	26	62	256	69	0	2	769
Oceana	0	0	0	0	44	23	90	34	0	8	462
Ogemaw	0	0	2	0	19	28	123	25	0	1	785
Osceola	0	0	3	0	54	53	168	20	0	2	815
Oscoda	0	0	0	0	51	23	103	20	0	2	1,186
Otsego	0	0	3	0	29	17	24	5	0	3	541
Presque Isle	0	0	3	0	17	40	22	2	0	0	629
Roscommon	0	0	0	0	19	44	224	13	0	14	986
Wexford	0	0	5	0	41	88	77	5	0	2	915
Total	0	55	154	0	979	1,535	2,893	425	3	64	20,228

(Table 7 continued on next page)

(Table 7 continued)

SOUTHERN LOWER PENINSULA

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
Allegan	0	0	0	0	27	28	84	33	4	19	291
Barry	0	1	1	0	55	46	118	41	5	32	363
Berrien	0	4	0	1	13	13	25	9	0	6	89
Branch	0	2	0	0	10	8	16	9	0	0	56
Calhoun	0	2	1	0	30	51	74	41	1	24	262
Cass	0	2	0	4	15	16	67	33	0	6	164
Clinton	0	0	2	0	9	32	41	4	0	13	132
Eaton	0	1	3	0	27	57	53	16	0	28	218
Genessee	0	3	0	0	7	10	9	4	0	0	39
Gratiot	0	3	0	0	18	34	15	14	0	0	105
Hillsdale	0	3	0	2	12	21	30	13	3	2	104
Huron	0	18	0	0	24	27	25	12	0	0	172
Ingham	0	0	0	0	21	40	38	25	0	0	146
Ionia	0	2	2	0	62	89	123	32	0	32	409
Jackson	0	3	1	3	36	65	82	47	3	7	290
Kalamazoo	0	0	0	0	1	0	1	0	0	0	2
Kent	0	0	0	0	79	66	215	59	0	25	558
Lapeer	0	3	0	0	2	8	4	6	0	0	27
Lenawee	0	2	0	2	2	14	20	11	0	0	69
Macomb	0	0	0	0	0	0	2	3	0	0	5
Monroe	0	14	0	3	2	11	21	14	0	0	74
Montcalm	0	0	2	0	56	60	116	38	0	9	480
Muskegon	0	0	0	0	1	7	61	19	1	0	247
Oakland	0	6	0	0	5	22	30	16	0	0	99
Ottawa	0	0	0	0	0	0	3	0	0	0	108
Saginaw	0	10	0	0	13	35	28	13	0	0	135
St. Clair	0	1	0	0	7	16	21	25	0	0	81
St. Joseph	0	2	0	3	19	19	39	12	0	2	112
Sanilac	0	10	0	0	11	16	15	9	0	0	101
Shiawassee	0	2	0	0	5	6	4	4	0	0	25
Tuscola	0	10	0	0	7	8	7	6	0	1	96
Van Buren	0	3	0	0	31	16	49	20	0	2	143
Washtenaw	0	3	0	9	2	21	35	20	0	0	116
Wayne	0	0	0	0	0	0	0	0	0	0	0
Total	0	110	12	27	609	862	1,471	608	17	208	5,318
State total	879	165	1,419	27	6,910	3,506	4,565	1,033	20	332	56,607

Table 8.--Michigan pulpwood production by species group and destination, 1977

(In thousand standard cords, unpeeled)

Species group	Destination of wood			
	Michigan	Wisconsin	Other States and Canada	Total
ROUNDWOOD:[1/]				
Jack pine	125	58	0	183
Balsam fir	45	42	8	95
Red pine	57	9	0	66
Hemlock	52	10	0	62
Spruce	22	19	7	48
Other softwoods	17	5	0	22
Aspen	369	163	0	532
Oak	107	0	0	107
Soft maple	77	12	0	89
Birch	47	15	0	62
Hard maple	32	28	0	60
Other hardwoods	50	27	0	77
Total	1,000	388	15	1,403
RESIDUE:				
Softwood	16	1	4	21
Hardwood	143	18	10	171
All material	1,159	407	29	1,595

[1/] Includes chips from roundwood.

Table 9.--Pulpwood production from roundwood by county and species, Michigan, 1977

(In thousand cords, unpeeled)

EASTERN UPPER PENINSULA

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
Alger	452	2,984	7,610	11,995	2,314	1,330	1,380	105	204	6,623	94	83	2,198	2,917
Chippewa	168	4,152	2,237	13,545	1,382	602	5,601	138	76	3,497	15	16	392	692
Delta	1,023	15,185	6,329	6,509	3,348	1,853	5,764	303	927	35,443	4,146	183	1,003	5,758
Luce	215	4,247	5,985	16,677	1,108	619	2,641	50	88	2,223	454	22	879	1,084
Mackinac	829	5,525	1,693	2,763	795	467	1,017	46	116	4,201	1,699	0	810	1,458
Menominee	400	10,477	2,792	268	1,036	639	6,763	767	3,074	42,760	4,464	57	291	3,704
Schoolcraft	468	5,281	4,360	11,544	1,566	938	4,152	109	178	11,287	2,640	0	425	2,384
Total	3,555	47,851	31,006	63,301	11,549	6,448	27,318	1,518	4,663	106,034	13,512	361	5,998	17,997

WESTERN UPPER PENINSULA

Baraga	932	6,447	6,666	3,062	2,382	1,481	2,171	220	220	22,521	0	317	0	1,997
Dickinson	102	5,061	1,333	710	264	165	2,007	371	1,098	49,026	1,226	82	89	3,296
Gogebic	276	4,354	6,115	1,440	781	437	511	64	92	17,695	0	5	0	533
Houghton	107	1,729	2,212	1,525	575	168	515	25	95	4,274	8	0	0	676
Iron	687	14,727	5,431	3,875	3,717	1,186	8,020	412	625	48,357	703	73	0	2,756
Keweenaw	5	30	195	85	45	8	77	1	21	30	0	0	0	25
Marquette	852	11,252	5,091	20,645	3,271	1,907	6,620	225	540	22,753	3,670	41	36	6,543
Ontonagon	147	1,457	3,964	666	514	231	284	34	96	30,684	0	211	0	462
Total	3,108	45,057	31,007	32,008	11,549	5,583	20,205	1,352	2,787	195,340	5,607	729	125	16,288

(Table 9 continued on next page)

(Table 9 continued)

NORTHERN LOWER PENINSULA

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
Alcona	0	0	0	310	0	0	0	0	472	25,930	111	96	86	1,609
Alpena	0	220	0	585	14	4	16	0	700	9,184	44	67	100	1,056
Antrim	0	0	0	0	0	0	0	0	0	587	0	33	0	0
Arenac	0	0	0	0	0	0	0	0	10	416	0	10	0	60
Benzie	0	0	0	0	336	0	0	0	208	5,824	0	208	104	440
Charlevoix	0	0	0	0	671	0	0	0	0	0	0	0	0	0
Cheboygan	0	131	0	3,123	906	0	44	0	942	8,445	44	111	140	521
Clare	0	0	0	3,190	0	0	0	0	333	15,193	0	208	322	380
Crawford	0	0	0	3,613	98	51	0	0	107	1,184	0	52	104	78
Emmet	0	0	0	711	79	42	0	0	0	434	0	0	0	58
Gladwin	0	0	0	232	0	0	0	0	52	6,244	0	52	7	670
Grand Traverse	0	0	0	1,959	0	0	0	0	52	3,963	0	52	104	129
Iosco	0	0	0	11,408	761	21	0	0	52	802	0	52	0	19
Isabella	0	0	0	0	37	0	0	0	39	3,712	0	0	12	33
Kalkaska	0	12	5	3,494	1,607	47	0	0	104	9,494	0	135	208	215
Lake	0	0	0	5,127	0	0	0	0	429	18,423	0	416	417	131
Leelanau	0	0	0	0	0	0	0	0	208	832	0	208	104	58
Manistee	0	0	0	0	1,752	0	0	0	315	6,037	0	208	306	291
Mason	0	0	0	0	37	0	0	0	52	7,419	0	52	124	385
Mecosta	0	0	0	0	2,699	0	0	0	99	10,790	0	52	38	114
Midland	0	0	0	0	0	0	0	0	104	3,457	0	67	52	226
Missaukee	0	0	0	1,284	629	0	0	0	53	3,144	0	52	52	197
Montmorency	0	295	0	8,221	345	156	97	0	240	14,846	67	22	40	653
Newaygo	0	0	0	0	6,103	0	0	0	103	7,896	0	0	81	107
Oceana	0	0	0	0	3,222	0	0	0	480	5,123	0	208	448	72
Ogemaw	0	0	0	5,688	0	0	0	0	132	3,227	0	52	104	210
Osceola	0	0	0	0	2,205	0	0	0	45	14,183	0	48	55	291
Oscoda	0	97	0	8,727	241	120	32	0	206	9,354	22	48	46	608
Otsego	0	106	0	5,971	228	104	18	0	0	738	0	0	0	0
Presque Isle	0	706	58	3,859	152	80	133	0	220	11,400	67	22	20	1,933
Roscommon	0	0	0	9,226	0	0	0	0	1	8,075	0	0	0	151
Wexford	0	0	0	10,259	9,572	42	0	0	111	5,359	0	104	104	164
Total	0	1,567	63	86,987	31,694	667	340	0	5,869	221,715	355	2,635	3,178	10,859
SOUTHERN LOWER PENINSULA														
Allegan	0	0	0	1,154	1,154	0	0	0	6	427	0	0	0	12
Barry	0	0	0	0	240	0	0	0	0	48	0	0	0	0
Calhoun	0	0	0	0	101	0	0	0	0	0	0	0	0	0
Gratiot	0	0	0	0	0	0	0	0	140	584	0	0	50	0
Kent	0	0	0	0	368	0	0	0	706	928	0	0	315	1
Montcalm	0	0	0	0	1,241	0	0	0	483	3,605	0	0	180	15
Muskegon	0	0	0	0	3,797	0	0	0	8	3,124	0	0	0	16
Ottawa	0	0	0	0	3,855	0	0	0	0	13	0	0	0	0
Saginaw	0	0	0	0	52	0	0	0	1	187	0	0	0	2
Washtenaw	0	0	0	0	114	0	0	0	0	0	0	0	0	0
Total	0	0	0	1,154	10,922	0	0	0	1,344	8,916	0	0	545	46
State total	6,663	94,475	62,076	183,450	65,714	12,698	47,863	2,870	14,663	532,005	19,474	3,725	9,846	45,190

(Table 9 continued on next page)

(Table 9 continued)

EASTERN UPPER PENINSULA

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
Alger	708	0	613	0	2,788	3,759	57	0	0	67	48,281
Chippewa	176	0	112	0	905	654	27	0	0	11	34,398
Delta	1,296	0	2,040	0	5,640	5,004	226	0	0	195	102,175
Luce	242	0	207	0	1,566	1,043	50	0	0	21	39,421
Mackinac	42	0	222	0	513	394	0	0	0	26	22,616
Menominee	1,240	0	5,715	0	4,909	3,580	100	0	0	495	93,531
Schoolcraft	377	0	511	0	1,837	910	121	0	0	54	49,142
Total	4,081	0	9,420	0	18,158	15,344	581	0	0	869	389,564

WESTERN UPPER PENINSULA

Baraga	2,004	0	1,968	0	6,812	3,546	100	0	0	356	63,202
Dickinson	718	0	1,490	0	3,710	1,966	111	0	0	193	73,018
Gogebic	1,597	0	1,618	0	3,277	1,229	4	0	0	321	40,349
Houghton	1,060	0	1,177	0	2,342	893	6	0	0	221	17,608
Iron	4,233	0	5,234	0	10,934	4,716	125	0	0	901	116,712
Keweenaw	14	0	93	0	343	82	0	0	0	8	1,062
Marquette	1,628	0	1,632	0	5,986	3,755	365	0	0	160	96,972
Ontonagon	1,655	0	1,653	0	3,709	3,222	0	0	0	334	49,323
Total	12,909	0	14,865	0	37,113	19,409	711	0	0	2,494	458,246

(Table 9 continued on next page)

(Table 9 continued)

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
NORTHERN LOWER PENINSULA											
Alcona	0	0	0	0	110	2,555	9,997	1,150	0	16	42,442
Alpena	0	0	0	0	160	2,997	696	110	0	0	15,953
Antrim	0	0	0	0	0	104	0	0	0	0	724
Arenac	0	0	0	0	0	52	0	0	0	7	555
Benzie	0	0	0	0	104	2,600	728	104	0	40	10,696
Charlevoix	0	0	0	0	0	0	0	0	0	0	671
Cheboygan	0	0	0	0	243	3,858	213	26	0	0	18,747
Clare	0	0	0	0	354	3,485	8,097	507	0	161	32,230
Crawford	0	0	0	0	32	1,109	3,854	150	0	26	10,458
Emmet	0	0	0	0	0	89	0	0	0	0	1,413
Gladwin	0	0	0	0	0	742	1,040	104	0	0	9,143
Grand Traverse	0	0	0	0	104	759	111	53	0	52	7,338
Iosco	0	0	0	0	0	728	477	50	0	0	14,370
Isabella	0	0	0	0	70	245	1,342	258	0	4	5,752
Kalkaska	0	0	0	0	52	2,080	2,080	208	0	52	19,793
Lake	0	0	0	0	231	7,385	14,245	677	0	104	47,585
Leelanau	0	0	0	0	104	208	297	104	0	104	2,227
Manistee	0	0	0	0	347	4,337	2,970	430	0	129	17,122
Mason	0	0	0	0	104	3,208	4,314	114	0	93	15,902
Mecosta	0	0	0	0	121	318	2,350	152	0	10	16,743
Midland	0	0	0	0	0	1,144	416	0	0	0	5,466
Missaukee	0	0	0	0	3	1,055	1,666	155	0	52	8,342
Montmorency	0	0	0	0	60	1,214	4,658	410	0	0	31,324
Newaygo	0	0	0	0	155	667	4,629	966	0	13	20,720
Oceana	0	0	0	0	732	442	2,351	867	0	144	14,089
Ogemaw	0	0	0	0	20	727	3,050	630	0	47	13,887
Osceola	0	0	0	0	101	825	2,396	353	0	6	20,508
Oscoda	0	0	0	0	66	1,215	2,604	281	0	89	23,756
Otsego	0	0	0	0	0	0	110	0	0	0	7,275
Presque Isle	0	0	0	0	40	1,303	1,253	159	0	0	21,405
Roscommon	0	0	0	0	2	1,152	4,736	64	0	0	23,407
Wexford	0	0	0	0	118	4,747	5,151	309	0	135	36,175
Total	0	0	0	0	3,433	51,350	85,831	8,391	0	1,284	516,218
SOUTHERN LOWER PENINSULA											
Allegan	0	0	0	0	12	60	420	90	0	0	3,335
Barry	0	0	0	0	0	0	0	0	0	0	288
Calhoun	0	0	0	0	0	0	0	0	0	0	101
Gratiot	0	0	0	0	110	271	279	174	0	43	1,651
Kent	0	0	0	0	685	1,172	2,694	1,611	0	215	8,695
Montcalm	0	0	0	0	438	1,352	3,741	1,956	0	183	13,194
Muskegon	0	0	0	0	16	80	605	154	0	0	7,800
Ottawa	0	0	0	0	0	0	0	0	0	0	3,868
Saginaw	0	0	0	0	2	13	88	19	0	0	364
Washtenaw	0	0	0	0	0	0	0	0	0	0	114
Total	0	0	0	0	1,263	2,948	7,827	4,004	0	441	39,410
State total	16,990	0	24,285	0	59,967	89,051	94,950	12,395	0	5,088	1,403,438

Table 10.--Pulpwood receipts in Michigan by species group and area of origin, 1977

(In thousand standard cords, unpeeled)

Species group	Total	Area of origin		
		Michigan	Wisconsin	Other States
ROUNDWOOD:[1]				
Jack pine	135	125	10	0
Balsam fir	52	45	7	0
Red pine	61	57	4	0
Hemlock	62	52	10	0
Spruce	25	22	3	0
Other softwoods	21	17	4	0
Aspen	370	369	1	0
Oak	107	107	([2])	0
Soft maple	78	77	1	0
Birch	48	47	1	0
Hard maple	33	32	1	0
Other hardwoods	51	50	1	0
Total	1,043	1,000	43	0
RESIDUE:				
Softwood	17	16	1	0
Hardwood	173	143	21	9
All material	1,233	1,159	65	9

[1] Includes chips from roundwood.

[2] Less than 500 cords.

Table 11.--Saw log production in Michigan by species, 1972 and 1977

(In thousand board feet)[1]

Species	1972	1977	Change
SOFTWOODS:			
Cedar	8,514	4,228	-4,286
Balsam fir	1,194	3,439	2,245
Hemlock	19,014	8,724	-10,290
Jack pine	4,536	15,697	11,161
Red pine	7,975	21,973	13,998
White pine	17,164	30,841	13,677
Spruce	819	6,595	5,776
Tamarack	128	0	-128
Total	59,344	91,497	32,153
HARDWOODS:			
Ash	10,156	15,465	5,309
Aspen	63,694	98,361	34,667
Balsam poplar	([2])	244	([4])
Basswood	19,041	15,480	-3,561
Beech	22,399	19,035	-3,364
Paper birch	4,967	9,870	4,903
Yellow birch	17,072	4,018	-13,054
Cottonwood	8,055	3,139	-4,916
Elm	22,367	19,202	-3,165
Hickory	1,654	681	-973
Hard maple	110,365	90,352	-20,013
Soft maple	35,328	35,903	575
Red oak	62,074	82,766	20,692
White oak	14,014	22,590	8,576
Walnut	1,011([3])	271	-740
Other hardwoods	2,890	5,082	([4])
Total	395,087	422,459	27,372
All species	454,431	513,956	59,525

[1] International 1/4-inch rule.

[2] Included in other hardwoods.

[3] Includes balsam poplar.

[4] Not applicable.

Table 12.--Saw log production by unit, species, and state of destination, Michigan, 1977

(In thousand board feet)[1/]

ALL UNITS

Species	Michigan	Wisconsin	Indiana	Ohio	Total
SOFTWOODS:					
Cedar	4,226	2	0	0	4,228
Balsam fir	104	3,335	0	0	3,439
Hemlock	6,882	1,842	0	0	8,724
Jack pine	13,513	2,184	0	0	15,697
Red pine	12,593	9,380	0	0	21,973
White pine	19,994	10,847	0	0	30,841
Spruce	3,082	3,513	0	0	6,595
Tamarack	0	0	0	0	0
Total	60,394	31,103	0	0	91,497
HARDWOODS:					
Ash	15,293	11	161	0	15,465
Aspen	81,168	17,183	10	0	98,361
Balsam poplar	244	0	0	0	244
Basswood	14,660	699	121	0	15,480
Beech	18,825	0	210	0	19,035
Paper birch	8,305	1,565	0	0	9,870
Yellow birch	3,584	432	2	0	4,018
Cottonwood	3,041	0	98	0	3,139
Elm	17,892	1,296	14	0	19,202
Hickory	495	0	186	0	681
Hard maple	86,791	3,228	333	0	90,352
Soft maple	35,426	108	369	0	35,903
Red oak	80,859	22	1,885	0	82,766
White oak	22,128	0	462	0	22,590
Walnut	200	0	12	59	271
Other species	4,882	22	178	0	5,082
Total	393,793	24,566	4,041	59	422,459
All species	454,187	55,669	4,041	59	513,956

EASTERN UPPER PENINSULA

SOFTWOODS:					
Cedar	2,699	0	0	0	2,699
Balsam fir	17	0	0	0	17
Hemlock	2,090	0	0	0	2,090
Jack pine	5	780	0	0	785
Red pine	2,562	1,040	0	0	3,602
White pine	8,152	780	0	0	8,932
Spruce	1,270	0	0	0	1,270
Tamarack	0	0	0	0	0
Total	16,795	2,600	0	0	19,395
HARDWOODS:					
Ash	984	0	0	0	984
Aspen	7,261	0	0	0	7,261
Balsam poplar	244	0	0	0	244
Basswood	1,537	254	0	0	1,791
Beech	12,931	0	0	0	12,931
Paper birch	986	0	0	0	986
Yellow birch	1,537	0	0	0	1,537
Cottonwood	0	0	0	0	0
Elm	7,301	0	0	0	7,301
Hickory	0	0	0	0	0
Hard maple	27,581	0	0	0	27,581
Soft maple	5,191	0	0	0	5,191
Red oak	912	0	0	0	912
White oak	11	0	0	0	11
Walnut	0	0	0	0	0
Other species	108	0	0	0	108
Total	66,584	254	0	0	66,838
All species	83,379	2,854	0	0	86,233

(Table 12 continued on next page)

(Table 12 continued)

Species	Michigan	Wisconsin	Indiana	Ohio	Total
WESTERN UPPER PENINSULA					
SOFTWOODS:					
Cedar	1,041	2	0	0	1,043
Balsam fir	13	3,335	0	0	3,348
Hemlock	4,190	1,842	0	0	6,032
Jack pine	0	1,352	0	0	1,352
Red pine	1,684	8,340	0	0	10,024
White pine	6,092	10,067	0	0	16,159
Spruce	1,608	3,513	0	0	5,121
Tamarack	0	0	0	0	0
Total	14,628	28,451	0	0	43,079
HARDWOODS:					
Ash	1,340	11	0	0	1,351
Aspen	7,289	17,183	0	0	24,472
Balsam poplar	0	0	0	0	0
Basswood	2,729	445	0	0	3,174
Beech	1,051	0	0	0	1,051
Paper birch	5,032	1,565	0	0	6,597
Yellow birch	1,946	432	0	0	2,378
Cottonwood	0	0	0	0	0
Elm	7,293	1,296	0	0	8,589
Hickory	0	0	0	0	0
Hard maple	33,297	3,228	0	0	36,525
Soft maple	4,331	108	0	0	4,439
Red oak	3,250	22	0	0	3,272
White oak	0	0	0	0	0
Walnut	0	0	0	0	0
Other species	76	22	0	0	98
Total	67,634	24,312	0	0	91,946
All species	82,262	52,763	0	0	135,025
NORTHERN LOWER PENINSULA					
SOFTWOODS:					
Cedar	486	0	0	0	486
Balsam fir	74	0	0	0	74
Hemlock	602	0	0	0	602
Jack pine	13,508	52	0	0	13,560
Red pine	8,107	0	0	0	8,107
White pine	5,495	0	0	0	5,495
Spruce	204	0	0	0	204
Tamarack	0	0	0	0	0
Total	28,476	52	0	0	28,528
HARDWOODS:					
Ash	4,032	0	0	0	4,032
Aspen	64,122	0	0	0	64,122
Balsam poplar	0	0	0	0	0
Basswood	6,818	0	0	0	6,818
Beech	3,420	0	0	0	3,420
Paper birch	2,230	0	0	0	2,230
Yellow birch	41	0	0	0	41
Cottonwood	1,036	0	0	0	1,036
Elm	2,980	0	0	0	2,980
Hickory	69	0	0	0	69
Hard maple	15,716	0	0	0	15,716
Soft maple	11,059	0	0	0	11,059
Red oak	43,200	0	0	0	43,200
White oak	8,190	0	0	0	8,190
Walnut	60	0	0	0	60
Other species	985	0	0	0	985
Total	163,958	0	0	0	163,958
All species	192,434	52	0	0	192,486

(Table 12 continued on next page)

(Table 12 continued)

Species	SOUTHERN LOWER PENINSULA				
	Michigan	Wisconsin	Indiana	Ohio	Total
SOFTWOODS:					
Cedar	0	0	0	0	0
Balsam fir	0	0	0	0	0
Hemlock	0	0	0	0	0
Jack pine	0	0	0	0	0
Red pine	240	0	0	0	240
White pine	255	0	0	0	255
Spruce	0	0	0	0	0
Tamarack	0	0	0	0	0
Total	495	0	0	0	495
HARDWOODS:					
Ash	8,937	0	161	0	9,098
Aspen	2,496	0	10	0	2,506
Balsam poplar	0	0	0	0	0
Basswood	3,576	0	121	0	3,697
Beech	1,423	0	210	0	1,633
Paper birch	57	0	0	0	57
Yellow birch	60	0	2	0	62
Cottonwood	2,005	0	98	0	2,103
Elm	318	0	14	0	332
Hickory	426	0	186	0	612
Hard maple	10,197	0	333	0	10,530
Soft maple	14,845	0	369	0	15,214
Red oak	33,497	0	1,885	0	35,382
White oak	13,927	0	462	0	14,389
Walnut	140	0	12	59	211
Other species	3,713	0	178	0	3,891
Total	95,617	0	4,041	59	99,717
All species	96,112	0	4,041	59	100,212

1/International 1/4-inch rule.

Table 13.--Saw log production by unit, county, and species, Michigan, 1977

(In thousand board feet)

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar	Basswood	Beech	White birch
EASTERN UPPER PENINSULA														
Alger	41	0	1,594	0	121	2,198	121	0	190	57	0	174	4,972	0
Chippewa	325	5	45	0	463	695	312	0	294	1,495	97	406	446	251
Delta	397	0	30	0	0	1,537	39	0	19	312	0	282	32	46
Luce	71	5	43	520	1,342	1,720	102	0	157	1,684	0	76	3,887	121
Mackinac	192	5	87	5	298	340	627	0	162	1,023	147	243	588	137
Menominee	1,645	0	258	0	97	1,121	56	0	81	2,655	0	538	170	417
Schoolcraft	28	2	33	260	1,281	1,321	13	0	81	35	0	72	2,836	14
Total	2,699	17	2,090	785	3,602	8,932	1,270	0	984	7,261	244	1,791	12,931	986
WESTERN UPPER PENINSULA														
Baraga	39	0	640	0	16	367	69	0	25	397	0	163	0	1,449
Dickinson	556	0	119	520	535	1,025	85	0	75	1,826	0	659	42	92
Gogebic	0	1,334	1,392	0	2,793	2,995	1,334	0	361	7,425	0	460	0	1,135
Houghton	182	334	841	0	920	1,026	1,331	0	273	3,384	0	572	0	518
Iron	2	333	336	260	1,247	3,135	490	0	88	2,717	0	601	0	413
Keweenaw	45	0	347	0	1,036	932	139	0	5	19	0	14	0	421
Marquette	146	13	1,826	416	455	3,521	276	0	62	1,066	0	277	1,009	1,316
Ontonagon	73	1,334	531	156	3,022	3,158	1,397	0	462	7,638	0	428	0	1,253
Total	1,043	3,348	6,032	1,352	10,024	16,159	5,121	0	1,351	24,472	0	3,174	1,051	6,597
NORTHERN LOWER PENINSULA														
Alcona	0	20	0	348	257	150	20	0	14	2,982	0	27	13	40
Alpena	55	25	0	3,312	595	20	20	0	31	684	0	31	0	92
Antrim	0	2	54	250	414	26	2	0	427	1,354	0	1,424	367	56
Arenac	0	0	0	0	100	0	0	0	25	1,116	0	10	0	70
Bay	0	0	0	0	0	0	0	0	43	17	0	17	0	0
Benzie	0	0	0	0	82	43	0	0	211	244	0	207	239	0
Charlevoix	0	0	15	0	216	0	0	0	10	960	0	611	22	0
Cheboygan	0	2	0	0	35	375	2	0	110	4,743	0	475	287	83
Clare	0	0	0	104	182	109	0	0	212	4,265	0	162	10	31
Crawford	0	0	0	558	639	535	0	0	4	2,979	0	88	32	28
Emmet	0	0	15	0	162	0	0	0	422	3,081	0	791	326	156
Gladwin	0	0	0	0	5	0	0	0	50	2,688	0	50	0	225
Grand Traverse	0	0	40	0	372	372	0	0	280	88	0	91	16	0
Iosco	133	0	0	7	819	624	9	0	160	1,611	0	0	0	0
Isabella	0	0	0	0	0	69	0	0	171	151	0	107	116	62
Kalkaska	0	0	60	127	212	257	0	0	0	1,475	0	98	56	56
Lake	0	0	0	0	69	22	0	0	140	812	0	137	51	0
Leelanau	0	0	30	0	15	1	0	0	54	39	0	54	177	0
Manistee	0	0	0	0	159	58	0	0	167	847	0	98	215	0
Mason	0	0	0	0	51	22	0	0	111	520	0	102	108	0
Mecosta	0	0	0	0	0	41	0	0	371	1,201	0	159	92	10
Midland	0	0	0	0	108	0	0	0	208	3,420	0	248	0	201
Missaukee	1	1	3	5	5	240	0	0	2	1,838	0	5	142	140
Montmorency	55	5	0	4,486	1,246	352	0	0	88	4,702	0	315	140	201
Newaygo	0	0	0	0	0	35	0	0	213	780	0	107	25	0
Oceana	1	0	68	0	14	127	0	0	73	815	0	46	147	0
Ogemaw	0	0	0	111	270	587	0	0	54	6,571	0	50	50	274
Osceola	56	0	143	18	59	204	37	0	159	2,842	0	399	298	102
Oscoda	0	0	0	3,833	1,475	213	0	0	0	3,110	0	4	4	32
Otsego	0	2	0	179	118	107	2	0	75	2,199	0	163	35	125
Presque Isle	15	15	0	0	0	275	0	0	31	1,589	0	256	75	92
Roscommon	1	1	3	161	202	516	0	0	2	3,773	0	93	2	154
Wexford	169	1	171	61	226	115	112	0	114	626	0	393	375	0
Total	486	74	602	13,560	8,107	5,495	204	0	4,032	64,122	0	6,818	3,420	2,230

(Table 13 continued on next page)

(Table 13 continued)

SOUTHERN LOWER PENINSULA

County	Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tama-rack	Ash	Aspen	Balsam poplar	Bass-wood	Beech	White birch
Allegan	0	0	0	0	0	67	0	0	508	20	0	31	0	0
Barry	0	0	0	0	0	0	0	0	597	47	0	325	97	0
Berrien	0	0	0	0	0	0	0	0	160	67	0	62	84	0
Branch	0	0	0	0	0	0	0	0	111	1	0	46	52	0
Calhoun	0	0	0	0	0	0	0	0	451	22	0	176	39	0
Cass	0	0	0	0	0	0	0	0	161	4	0	106	141	0
Clinton	0	0	0	0	0	0	0	0	318	0	0	107	194	0
Eaton	0	0	0	0	0	0	0	0	385	22	0	145	78	0
Genessee	0	0	0	0	0	0	0	0	60	1	0	61	0	0
Gratiot	0	0	0	0	0	0	0	0	60	12	0	102	4	0
Hillsdale	0	0	0	0	0	0	0	0	224	0	0	91	35	0
Huron	0	0	0	0	0	0	0	0	815	483	0	40	0	0
Ingham	0	0	0	0	0	0	0	0	201	3	0	218	3	0
Ionia	0	0	0	0	0	0	0	0	859	0	0	181	222	0
Jackson	0	0	0	0	0	0	0	0	428	22	0	340	39	0
Kalamazoo	0	0	0	0	0	0	0	0	0	0	0	10	0	0
Kent	0	0	0	0	26	24	0	0	713	93	0	287	120	0
Lapeer	0	0	0	0	0	0	0	0	42	15	0	54	0	0
Lenawee	0	0	0	0	0	0	0	0	234	0	0	90	25	0
Macomb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monroe	0	0	0	0	0	0	0	0	111	0	0	66	18	0
Montcalm	0	0	0	0	207	0	0	0	391	447	0	445	203	57
Muskegon	0	0	0	0	0	138	0	0	1	0	0	14	1	0
Oakland	0	0	0	0	0	0	0	0	351	0	0	35	0	0
Ottawa	0	0	0	0	0	14	0	0	0	0	0	3	65	0
Saginaw	0	0	0	0	0	0	0	0	371	35	0	232	0	0
St.Clair	0	0	0	0	0	0	0	0	162	0	0	60	0	0
St.Joseph	0	0	0	0	0	0	0	0	113	13	0	80	99	0
Sanilac	0	0	0	0	0	0	0	0	504	271	0	0	0	0
Shiawassee	0	0	0	0	0	0	0	0	50	0	0	50	0	0
Tuscola	0	0	0	0	7	0	0	0	234	885	0	43	0	0
Van Buren	0	0	0	0	0	12	0	0	232	43	0	63	70	0
Washtenaw	0	0	0	0	0	0	0	0	244	0	0	134	44	0
Wayne	0	0	0	0	0	0	0	0	7	0	0	0	0	0
Total	0	0	0	0	240	255	0	0	9,098	2,506	0	3,697	1,633	57
State total	4,228	3,439	8,724	15,697	21,973	30,841	6,595	0	15,465	98,361	244	15,480	19,035	9,870

(Table 13 continued on next page)

(Table 13 continued)

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
EASTERN UPPER PENINSULA											
Alger	556	0	1,261	0	9,183	1,654	130	0	0	89	22,341
Chippewa	1	0	375	0	2,319	479	104	11	0	0	8,123
Delta	94	0	1,927	0	1,858	84	14	0	0	19	6,690
Luce	118	0	436	0	5,923	1,443	150	0	0	0	17,798
Mackinac	29	0	782	0	2,097	217	52	0	0	0	7,031
Menominee	488	0	2,016	0	1,991	421	381	0	0	0	12,335
Schoolcraft	251	0	504	0	4,210	893	81	0	0	0	11,915
Total	1,537	0	7,301	0	27,581	5,191	912	11	0	108	86,233
WESTERN UPPER PENINSULA											
Baraga	329	0	1,174	0	5,746	442	82	0	0	0	10,938
Dickinson	292	0	1,852	0	1,348	442	368	0	0	50	9,886
Gogebic	36	0	845	0	3,575	397	38	0	0	13	24,133
Houghton	457	0	356	0	6,836	1,018	1,600	0	0	0	19,648
Iron	577	0	2,271	0	4,402	336	26	0	0	22	17,256
Keweenaw	53	0	0	0	967	452	776	0	0	0	5,206
Marquette	556	0	1,432	0	10,066	875	324	0	0	0	23,636
Ontonagon	78	0	659	0	3,585	477	58	0	0	13	24,322
Total	2,378	0	8,589	0	36,525	4,439	3,272	0	0	98	135,025
NORTHERN LOWER PENINSULA											
Alcona	0	0	0	0	180	53	1,395	451	60	0	6,010
Alpena	0	0	0	0	15	123	142	0	0	0	5,145
Antrim	0	0	693	0	1,146	339	211	70	0	0	6,835
Arenac	0	20	80	0	10	150	370	70	0	15	2,036
Bay	0	41	0	0	17	34	110	26	0	0	305
Benzie	0	0	8	0	443	237	491	0	0	101	2,306
Charlevoix	0	0	561	0	953	255	0	0	0	0	3,603
Cheboygan	0	0	213	0	867	457	11	0	0	0	7,660
Clare	0	140	0	19	553	753	3,270	390	0	0	10,200
Crawford	0	0	28	0	1,305	29	1,482	62	0	4	7,773
Emmet	0	0	570	0	1,375	498	54	27	0	0	7,477
Gladwin	0	15	2	0	372	491	870	10	0	0	4,778
Grand Trav	0	0	8	0	80	76	34	16	0	16	1,489
Iosco	0	0	0	0	116	80	847	195	0	0	4,601
Isabella	0	10	57	25	62	489	588	229	0	4	2,140
Kalkaska	0	0	56	0	389	47	1,385	528	0	0	4,746
Lake	0	0	10	3	450	916	6,458	531	0	48	9,647
Leelanau	0	0	0	0	173	28	0	0	0	0	571
Manistee	0	0	30	0	291	461	679	181	0	51	3,237
Mason	0	0	7	1	527	407	1,513	189	0	77	3,635
Mecosta	0	20	0	12	787	796	2,431	429	0	22	6,371
Midland	0	780	5	0	236	760	738	275	0	0	6,979
Missaukee	0	0	140	0	169	113	1,093	481	0	0	4,378
Montmorenc	23	0	150	0	432	283	651	258	0	75	13,462
Newaygo	0	0	0	8	385	981	5,076	1,452	0	41	9,103
Oceana	0	0	19	0	393	278	1,474	568	0	129	4,152
Ogemaw	0	0	30	0	367	295	2,115	434	0	24	11,232
Osceola	0	10	75	1	955	756	3,561	395	0	41	10,111
Oscoda	2	0	0	0	915	0	1,569	458	0	0	11,615
Otsego	15	0	75	0	465	0	606	131	0	75	4,372
Presque Isle	0	0	75	0	225	273	92	0	0	0	3,013
Roscommon	1	0	0	0	350	461	3,803	302	0	254	10,079
Wexford	0	0	88	0	713	140	81	32	0	8	3,425
Total	41	1,036	2,980	69	15,716	11,059	43,200	8,190	60	985	192,486

(Table 13 continued on next page)

(Table 13 continued)

SOUTHERN LOWER PENINSULA

County	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
Allegan	0	0	0	0	492	481	2,043	792	1	376	4,811
Barry	0	22	22	22	1,017	879	3,089	1,123	5	624	7,869
Berrien	13	55	1	27	237	213	626	254	0	90	1,889
Branch	0	55	0	14	173	166	354	207	12	7	1,198
Calhoun	0	29	22	25	525	949	1,949	1,027	1	461	5,676
Cass	14	28	6	83	268	307	1,630	839	16	110	3,713
Clinton	0	18	46	0	167	609	1,059	118	3	246	2,885
Eaton	0	23	68	22	485	1,077	1,431	442	16	514	4,708
Genessee	0	63	0	0	120	200	250	100	0	0	855
Gratiot	0	70	0	0	287	554	331	313	0	0	1,733
Hillsdale	0	70	0	29	215	388	681	326	45	27	2,131
Huron	0	342	0	0	452	502	630	325	0	0	3,589
Ingham	0	0	0	0	385	751	1,027	686	11	9	3,294
Ionia	0	33	46	0	1,142	1,668	3,259	835	1	599	8,845
Jackson	0	63	22	57	674	1,207	2,146	1,264	49	128	6,439
Kalamazoo	0	0	0	1	10	18	20	7	4	8	78
Kent	0	0	0	8	1,043	866	4,699	973	1	422	9,275
Lapeer	0	63	0	0	50	141	122	162	0	8	657
Lenawee	21	39	0	39	37	269	540	284	12	12	1,602
Macomb	0	0	0	0	0	0	55	83	0	0	138
Monroe	0	250	14	43	47	221	559	378	10	10	1,727
Montcalm	0	0	57	1	789	694	1,646	225	1	112	5,275
Muskegon	0	0	0	0	17	105	1,335	439	3	14	2,067
Oakland	0	100	0	0	100	405	799	446	0	0	2,236
Ottawa	0	0	0	0	0	0	54	15	0	0	151
Saginaw	0	190	0	0	246	659	645	247	0	0	2,625
St. Clair	0	21	0	0	150	293	545	660	0	0	1,891
St. Joseph	0	28	4	55	369	346	992	302	0	31	2,432
Sanilac	0	181	0	0	200	302	392	229	0	0	2,079
Shiawassee	0	50	0	0	100	100	100	100	0	0	550
Tuscola	0	190	0	0	126	166	190	163	0	22	2,026
Van Buren	14	48	3	7	563	291	1,233	517	1	42	3,139
Washtenaw	0	65	14	172	44	387	948	505	19	19	2,595
Wayne	0	7	7	7	0	0	3	3	0	0	34
Total	62	2,103	332	612	10,530	15,214	35,382	14,389	211	3,891	100,212
State total	4,018	3,139	19,202	681	90,352	35,903	82,766	22,590	271	5,082	513,956

1/International 1/4-inch rule.

Table 14.--Saw log receipts by species, unit, and state of origin, Michigan, 1977

(In thousand board feet)[1/]

ALL UNITS

Species	All states	Michigan	Wisconsin	Ohio
SOFTWOODS:				
Cedar	4,314	4,226	88	0
Balsam fir	104	104	0	0
Hemlock	6,882	6,882	0	0
Jack pine	13,513	13,513	0	0
Red pine	12,593	12,593	0	0
White pine	20,058	19,994	64	0
Spruce	3,088	3,082	6	0
Total	60,552	60,394	158	0
HARDWOODS:				
Ash	15,504	15,293	81	130
Aspen	81,677	81,168	509	0
Balsam poplar	244	244	0	0
Basswood	14,766	14,660	16	90
Beech	18,850	18,825	0	25
Paper birch	8,391	8,305	86	0
Yellow birch	3,619	3,584	35	0
Cottonwood	3,080	3,041	0	39
Elm	18,105	17,892	213	0
Hickory	534	495	0	39
Hard maple	87,099	86,791	283	25
Soft maple	35,856	35,426	173	257
Red oak	81,345	80,859	39	447
White oak	22,320	22,128	0	192
Walnut	212	200	0	12
Other species	4,894	4,882	0	12
Total	396,496	393,793	1,435	1,268
All species	457,048	454,187	1,593	1,268

EASTERN UPPER PENINSULA

Species	All states	Michigan	Wisconsin
SOFTWOODS:			
Cedar	3,317	3,229	88
Balsam fir	3	3	0
Hemlock	3,736	3,736	0
Jack pine	5	5	0
Red pine	2,549	2,549	0
White pine	11,332	11,268	64
Spruce	1,438	1,438	0
Total	22,380	22,228	152
HARDWOODS:			
Ash	962	881	81
Aspen	8,103	7,788	315
Balsam poplar	244	244	0
Basswood	1,855	1,850	5
Beech	13,982	13,982	0
Paper birch	1,311	1,225	86
Yellow birch	2,051	2,039	12
Cottonwood	0	0	0
Elm	8,543	8,406	137
Hickory	0	0	0
Hard maple	32,236	32,074	162
Soft maple	5,612	5,450	162
Red oak	1,408	1,408	0
White oak	0	0	0
Walnut	0	0	0
Other species	108	108	0
Total	76,415	75,455	960
All species	98,795	97,683	1,112

(Table 14 continued on next page)

(Table 14 continued)

WESTERN UPPER PENINSULA

Species	All states	Michigan	Wisconsin
SOFTWOODS:			
Cedar	511	511	0
Balsam fir	10	10	0
Hemlock	2,544	2,544	0
Jack pine	0	0	0
Red pine	1,680	1,680	0
White pine	2,976	2,976	0
Spruce	1,429	1,423	6
Total	9,150	9,144	6
HARDWOODS:			
Ash	1,308	1,308	0
Aspen	6,687	6,493	194
Balsam poplar	0	0	0
Basswood	2,292	2,281	11
Beech	0	0	0
Paper birch	4,712	4,712	0
Yellow birch	1,467	1,444	23
Cottonwood	0	0	0
Elm	6,102	6,026	76
Hickory	0	0	0
Hard maple	28,115	27,994	121
Soft maple	3,813	3,802	11
Red oak	2,777	2,738	39
White oak	0	0	0
Walnut	0	0	0
Other species	76	76	0
Total	57,349	56,874	475
All species	66,499	66,018	481

NORTHERN LOWER PENINSULA

Species	All states	Michigan
SOFTWOODS:		
Cedar	486	486
Balsam fir	91	91
Hemlock	602	602
Jack pine	13,508	13,508
Red pine	8,331	8,331
White pine	5,440	5,440
Spruce	221	221
Total	28,679	28,679
HARDWOODS:		
Ash	3,612	3,612
Aspen	62,390	62,390
Balsam poplar	0	0
Basswood	6,894	6,894
Beech	3,433	3,433
Paper birch	2,368	2,368
Yellow birch	41	41
Cottonwood	914	914
Elm	3,199	3,199
Hickory	48	48
Hard maple	16,859	16,859
Soft maple	11,421	11,421
Red oak	41,602	41,602
White oak	7,947	7,947
Walnut	60	60
Other species	1,000	1,000
Total	161,788	161,788
All species	190,467	190,467

(Table 14 continued on next page)

(Table 14 continued)

Species	SOUTHERN LOWER PENINSULA All states	Michigan	Ohio
SOFTWOODS:			
Cedar	0	0	0
Balsam fir	0	0	0
Hemlock	0	0	0
Jack pine	0	0	0
Red pine	33	33	0
White pine	310	310	0
Spruce	0	0	0
Total	343	343	0
HARDWOODS:			
Ash	9,622	9,492	130
Aspen	4,497	4,497	0
Balsam poplar	0	0	0
Basswood	3,725	3,635	90
Beech	1,435	1,410	25
Paper birch	0	0	0
Yellow birch	60	60	0
Cottonwood	2,166	2,127	39
Elm	261	261	0
Hickory	486	447	39
Hard maple	9,889	9,864	25
Soft maple	15,010	14,753	257
Red oak	35,558	35,111	447
White oak	14,373	14,181	192
Walnut	152	140	12
Other species	3,710	3,698	12
Total	100,944	99,676	1,268
All species	101,287	100,019	1,268

1/International 1/4-inch rule.

Table 15.--Veneer log and bolt production by species and state or country of destination, Michigan, 1977

(In thousand board feet)1/

Species	Michigan	Wisconsin	Indiana	Ohio	Kentucky	Canada	Total
Ash	11	142	4	0	0	0	157
Aspen	22,186	0	0	0	0	32	22,218
Basswood	738	199	26	0	0	15	978
Beech	11	89	0	0	0	15	115
Paper birch	988	401	0	0	0	0	1,389
Yellow birch	2,600	3,054	0	0	0	0	5,654
Cottonwood	165	0	0	0	0	0	165
Elm	11	457	47	0	0	0	515
Hickory	0	0	43	0	0	0	43
Hard maple	3,078	3,343	501	137	0	489	7,548
Soft maple	172	134	0	0	0	0	306
Red oak	388	658	808	0	286	252	2,392
White oak	0	0	478	68	113	0	659
Walnut	0	0	338	41	114	0	493
Other species	30	33	43	0	0	0	106
All species	30,378	8,510	2,288	246	513	803	42,738

1/International 1/4-inch rule.

Table 16.--Veneer log production by unit, county, and species group, Michigan, 1977

(In thousand board feet)[1/]

County	Ash	Aspen	Bass-wood	Beech	White birch	Yellow birch	Cotton-wood	Elm
EASTERN UPPER PENINSULA								
Alger	0	0	0	37	183	1,212	0	23
Chippewa	0	0	0	3	39	151	0	22
Delta	0	0	0	0	274	112	0	16
Luce	0	0	0	19	126	779	0	14
Mackinac	0	17	0	3	39	116	0	16
Menominee	0	0	0	0	182	110	0	16
Schoolcraft	0	0	0	23	129	789	0	22
Total	0	17	0	85	972	3,269	0	129
WESTERN UPPER PENINSULA								
Baraga	0	0	0	0	21	286	0	32
Dickinson	0	0	0	0	231	108	0	10
Gogebic	142	9,900	48	0	13	296	0	29
Houghton	0	0	69	0	16	292	0	18
Iron	0	2,200	0	0	27	312	0	189
Keweenaw	0	0	0	0	8	123	0	8
Marquette	0	0	0	19	78	668	0	35
Ontonagon	0	9,900	72	0	23	300	0	54
Total	142	22,000	189	19	417	2,385	0	375
NORTHERN LOWER PENINSULA								
Antrim	0	0	78	0	0	0	0	0
Benzie	0	0	0	0	0	0	0	0
Charlevoix	0	0	98	0	0	0	0	0
Cheboygan	0	0	92	0	0	0	0	0
Crawford	0	0	0	0	0	0	60	0
Emmet	0	15	119	0	0	0	0	0
Manistee	0	0	0	0	0	0	0	0
Montmorency	0	0	98	0	0	0	0	0
Oceana	11	171	86	11	0	0	0	11
Otsego	0	0	98	0	0	0	0	0
Presque Isle	0	0	84	0	0	0	0	0
Total	11	186	753	11	0	0	60	11
SOUTHERN LOWER PENINSULA								
Allegan	1	0	0	0	0	0	0	0
Barry	0	0	0	0	0	0	0	0
Berrien	0	10	5	0	0	0	78	0
Branch	0	0	0	0	0	0	0	0
Calhoun	0	0	16	0	0	0	0	0
Cass	0	0	5	0	0	0	0	0
Clinton	0	0	0	0	0	0	0	0
Eaton	0	0	0	0	0	0	0	0
Hillsdale	0	0	5	0	0	0	0	0
Ionia	0	0	0	0	0	0	0	0
Jackson	0	0	5	0	0	0	0	0
Kalamazoo	0	0	0	0	0	0	0	0
Kent	1	0	0	0	0	0	0	0
Montcalm	1	0	0	0	0	0	0	0
Muskegon	1	0	0	0	0	0	0	0
Ottawa	0	0	0	0	0	0	0	0
Saginaw	0	0	0	0	0	0	0	0
St. Joseph	0	0	0	0	0	0	0	0
Van Buren	0	5	0	0	0	0	27	0
Total	4	15	36	0	0	0	105	0
State total	157	22,218	978	115	1,389	5,654	165	515

(Table 16 continued on next page)

(Table 16 continued)

County	Hickory	Hard maple	Soft maple	Red oak	White oak	Walnut	Other hard-woods	All species
EASTERN UPPER PENINSULA								
Alger	0	1,774	2	156	0	0	3	3,390
Chippewa	0	13	0	50	0	0	2	280
Delta	0	9	0	0	0	0	2	413
Luce	0	724	0	249	0	0	2	1,913
Mackinac	0	54	0	50	0	0	2	297
Menominee	0	9	0	0	0	0	2	319
Schoolcraft	0	850	1	97	0	0	2	1,913
Total	0	3,433	3	602	0	0	15	8,525
WESTERN UPPER PENINSULA								
Baraga	0	400	0	0	0	0	2	741
Dickinson	0	24	0	0	0	0	1	374
Gogebic	0	404	0	0	0	0	3	10,835
Houghton	0	163	0	0	0	0	2	560
Iron	0	69	101	21	0	0	3	2,922
Keweenaw	0	10	0	98	0	0	1	248
Marquette	0	570	4	494	0	0	3	1,871
Ontonagon	0	577	26	0	0	0	3	10,955
Total	0	2,217	131	613	0	0	18	28,506
NORTHERN LOWER PENINSULA								
Antrim	0	158	0	0	0	0	0	236
Benzie	0	3	0	0	0	0	0	3
Charlevoix	0	194	0	0	0	0	0	292
Cheboygan	0	158	0	0	0	0	0	250
Crawford	0	0	0	0	0	0	0	60
Emmet	0	206	0	0	0	0	0	340
Manistee	0	25	0	0	0	0	0	25
Montmorency	0	182	0	0	0	0	0	280
Oceana	0	0	51	0	0	0	0	341
Otsego	0	170	0	0	0	0	0	268
Presque Isle	0	146	0	0	0	0	0	230
Total	0	1,242	51	0	0	0	0	2,325
SOUTHERN LOWER PENINSULA								
Allegan	3	42	0	40	23	169	6	284
Barry	2	74	0	43	21	201	5	346
Berrien	3	59	51	17	0	0	30	253
Branch	0	14	0	88	51	7	0	160
Calhoun	5	25	0	23	114	35	0	218
Cass	5	55	0	216	73	12	3	369
Clinton	0	6	0	0	0	2	0	8
Eaton	0	59	0	0	0	10	0	69
Hillsdale	3	23	0	222	48	9	0	310
Ionia	1	56	0	16	11	1	2	87
Jackson	5	24	0	28	38	2	0	102
Kalamazoo	1	26	0	30	14	3	2	76
Kent	3	46	0	44	22	2	6	124
Montcalm	3	41	0	55	26	2	6	134
Muskegon	6	48	0	91	42	36	6	230
Ottawa	1	19	0	31	14	1	2	68
Saginaw	0	13	0	26	125	0	0	164
St. Joseph	0	0	70	91	0	0	0	161
Van Buren	2	26	0	116	37	1	5	219
Total	43	656	121	1,177	659	493	73	3,382
State total	43	7,548	306	2,392	659	493	106	42,738

Table 17.--Veneer log and bolt receipts by species and state of origin, Michigan, 1977

(In thousand board feet)[1/]

Species	All states	Michigan	Indiana	Kentucky
HARDWOODS:				
Ash	27	11	8	8
Aspen	22,186	22,186	0	0
Basswood	738	738	0	0
Beech	123	11	56	56
Paper birch	988	988	0	0
Yellow birch	2,600	2,600	0	0
Cottonwood	325	165	80	80
Elm	11	11	0	0
Hard maple	3,078	3,078	0	0
Soft maple	172	172	0	0
Red oak	476	388	44	44
Other species	114	30	42	42
Total	30,838	30,378	230	230
All species	30,838	30,378	230	230

[1/]International 1/4-inch rule.

Table 18.--Commercial post production by unit, county, and species, Michigan, 1977

(In thousand pieces)

County	Cedar	Balsam fir	Red pine	White pine	Spruce
EASTERN UPPER PENINSULA					
Chippewa	36	0	0	0	0
Delta	351	227	0	0	5
Menominee	741	413	0	0	0
Schoolcraft	5	1	0	0	0
Total	1,133	641	0	0	5
WESTERN UPPER PENINSULA					
Baraga	3	0	0	18	0
Dickinson	83	0	0	0	0
Iron	0	0	9	0	0
Marquette	21	6	0	0	1
Total	107	6	9	18	1
NORTHERN LOWER PENINSULA					
Alcona	5	0	0	0	0
Alpena	326	241	0	0	0
Clare	1	0	0	0	0
Isabella	11	0	0	0	0
Mecosta	2	0	0	0	0
Montmorency	115	35	0	0	0
Presque Isle	195	105	0	0	0
Total	655	381	0	0	0
SOUTHERN LOWER PENINSULA					
Allegan	0	0	5	0	0
Ottawa	0	0	5	0	0
Total	0	0	10	0	0
All units	1,895	1,028	19	18	6

Table 19.--Pole production by unit, county, and species, Michigan, 1977

(In number of pieces)

County	Cedar	Balsam fir	Jack pine	Red pine	Spruce	Aspen
EASTERN UPPER PENINSULA						
Alger	0	0	16	1,633	0	0
Delta	3,733	360	11	2,289	360	0
Luce	0	0	6	545	0	0
Menominee	3,733	360	0	1,200	360	0
Schoolcraft	3,733	480	11	2,689	480	0
Total	11,199	1,200	44	8,356	1,200	0
WESTERN UPPER PENINSULA						
Houghton	500	0	0	0	0	0
Keweenaw	4,500	0	0	0	0	0
Marquette	0	0	17	1,634	0	0
Total	5,000	0	17	1,634	0	0
NORTHERN LOWER PENINSULA						
Ogemaw	0	0	5	544	0	0
Osceola	0	0	11	1,089	0	0
Presque Isle	0	0	0	0	0	3,000
Roscommon	0	0	11	1,089	0	0
Total	0	0	27	2,722	0	3,000
SOUTHERN LOWER PENINSULA						
Allegan	0	0	0	125	0	0
Ottawa	0	0	0	125	0	0
Total	0	0	0	250	0	0
All units	16,199	1,200	88	12,962	1,200	3,000

Table 20.--Residue produced at primary wood-using mills by type of material and use, unit, and county, Michigan, 1977

(In thousand tons green weight)

EASTERN UPPER PENINSULA

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark 3/	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Alger								
Fiber products	2.41	43.44	2.41	43.44	0	0	0	0
Industrial fuel	1.10	22.16	.01	1.94	1.09	20.22	.77	12.63
Domestic fuel	0	4.78	0	4.78	0	0	.33	.03
Miscellaneous 4/	.10	9.92	0	0	.10	9.92	.15	5.44
Not used	.50	3.19	.17	0	.33	3.19	.16	1.93
Total	4.11	83.49	2.59	50.16	1.52	33.33	1.41	20.03
Chippewa								
Fiber products	0	1.39	0	1.39	0	0	0	0
Domestic fuel	1.49	1.88	1.49	1.88	0	0	.58	1.00
Miscellaneous 4/	.37	1.61	0	0	.37	1.61	.01	.35
Not used	.50	.30	0	0	.50	.30	.02	0
Total	2.36	5.18	1.49	3.27	.87	1.91	.61	1.35
Delta								
Fiber products	2.89	.72	2.89	.72	0	0	0	0
Industrial fuel	1.10	5.41	.71	5.41	.39	0	.27	2.42
Domestic fuel	.28	.65	.28	.65	0	0	.01	.13
Miscellaneous 4/	.12	3.87	0	0	.12	3.87	1.74	.30
Not used	1.78	.57	.01	.01	1.77	.56	.51	.19
Total	6.17	11.22	3.89	6.79	2.28	4.43	2.53	3.04
Luce								
Fiber products	2.22	10.09	2.22	10.09	0	0	0	0
Industrial fuel	1.17	4.68	0	0	1.17	4.68	0	0
Domestic fuel	.96	3.43	.96	3.43	0	0	.17	.57
Miscellaneous 4/	.51	2.60	0	0	.51	2.60	1.16	4.70
Not used	.90	2.83	.46	1.42	.44	1.41	.17	.57
Total	5.76	23.63	3.64	14.94	2.12	8.69	1.50	5.84
Mackinac								
Fiber products	0	1.18	0	1.18	0	0	0	0
Industrial fuel	0	.96	0	.96	0	0	.01	.39
Domestic fuel	1.60	3.83	1.60	3.83	0	0	.48	1.76
Miscellaneous 4/	.57	2.32	0	0	.57	2.32	0	.30
Not used	.75	1.27	.25	.08	.50	1.19	.08	.04
Total	2.92	9.56	1.85	6.05	1.07	3.51	.57	2.49
Menominee								
Fiber products	9.74	14.66	9.74	14.66	0	0	0	0
Industrial fuel	5.97	15.35	.45	8.03	5.52	7.32	4.09	6.49
Domestic fuel	2.68	.30	2.68	.30	0	0	.61	.12
Miscellaneous 4/	2.34	4.39	0	0	2.34	4.39	1.26	1.98
Not used	1.96	2.56	1.47	.56	.49	2.00	1.61	1.35
Total	22.69	37.26	14.34	23.55	8.35	13.71	7.57	9.94
Schoolcraft								
Fiber products	2.06	2.05	2.06	2.05	0	0	0	0
Not used	1.37	1.37	.11	.11	1.26	1.26	.92	.80
Total	3.43	3.42	2.17	2.16	1.26	1.26	.92	.80
All counties								
Fiber products	19.32	73.53	19.32	73.53	0	0	0	0
Industrial fuel	9.34	48.56	1.17	16.34	8.17	32.22	5.14	21.93
Domestic fuel	7.01	14.87	7.01	14.87	0	0	2.18	3.61
Miscellaneous 4/	4.01	24.71	0	0	4.01	24.71	4.32	13.07
Not used	7.76	12.09	2.47	2.18	5.29	9.91	3.47	4.88
Total	47.44	173.76	29.97	106.92	17.47	66.84	15.11	43.49

(Table 20 continued on next page)

(Table 20 continued)

WESTERN UPPER PENINSULA

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark 3/	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Baraga								
Fiber products	1.35	11.45	1.35	11.45	0	0	0	0
Industrial fuel	0	.35	0	.09	0	.26	0	.06
Domestic fuel	0	.35	0	.35	0	0	0	0
Miscellaneous 4/	.03	3.03	0	0	.03	3.03	0	0
Not used	.75	3.63	0	0	.75	3.63	.60	5.00
Total	2.13	18.81	1.35	11.89	.78	6.92	.60	5.06
Dickinson								
Fiber products	0	5.33	0	5.33	0	0	0	0
Industrial fuel	0	3.65	0	.35	0	3.30	0	2.42
Domestic fuel	.03	.05	.03	.05	0	0	0	.01
Miscellaneous 4/	0	.02	0	0	0	.02	0	0
Not used	.12	.04	.06	.02	.06	.02	.03	.02
Total	.15	9.09	.09	5.75	.06	3.34	.03	2.45
Gogebic								
Fiber products	.72	13.02	.72	13.02	0	0	0	0
Industrial fuel	2.70	12.42	1.44	4.93	1.26	7.49	.88	5.14
Miscellaneous 4/	0	16.82	0	15.44	0	1.38	0	.63
Not used	0	28.08	0	0	0	28.08	.03	13.68
Total	3.42	70.34	2.16	33.39	1.26	36.95	.91	19.45
Houghton								
Fiber products	.51	13.21	.51	13.21	0	0	0	0
Domestic fuel	1.17	4.86	1.17	4.86	0	0	.43	.97
Miscellaneous 4/	.65	2.66	0	0	.65	2.66	.08	.53
Not used	.68	8.31	.23	.28	.45	8.03	.17	6.31
Total	3.01	29.04	1.91	18.35	1.10	10.69	.68	7.81
Iron								
Fiber products	.36	2.60	.36	2.60	0	0	0	0
Domestic fuel			.04	1.40	.02	1.70	.01	1.89
Total	.63	8.73	.40	5.52	.23	3.21	.14	2.35
Keweenaw								
Industrial fuel	7.43	7.44	4.70	4.70	2.73	2.74	1.87	2.00
Miscellaneous 4/	0	0	0	0	0	0	.08	0
Total	7.43	7.44	4.70	4.70	2.73	2.74	1.95	2.00
Marquette								
Fiber products	.87	8.40	.87	8.40	0	0	0	0
Industrial fuel	.29	5.79	.29	5.79	0	0	0	0
Domestic fuel	.15	.22	.15	.22	0	0	.06	.09
Miscellaneous 4/	.51	7.58	0	0	.51	7.58	.25	3.08
Not used	.58	.80	.20	0	.38	.80	.27	2.95
Total	2.40	22.79	1.51	14.41	.89	8.38	.58	6.12
Ontonagon								
Domestic fuel	.15	0	.15	0	0	0	.06	0
Miscellaneous 4/	.09	0	0	0	.09	0	0	0
Total	.24	0	.15	0	.09	0	.06	0
All counties								
Fiber products	3.81	54.01	3.81	54.01	0	0	0	0
Industrial fuel	10.42	29.65	6.43	15.86	3.99	13.79	2.75	9.62
Domestic fuel	1.50	7.00	1.50	7.00	0	0	.55	1.07
Miscellaneous 4/	1.49	31.62	0	15.44	1.49	16.18	.54	4.70
Not used	2.19	43.96	.53	1.70	1.66	42.26	1.11	29.85
Total	19.41	166.24	12.27	94.01	7.14	72.23	4.95	45.24

(Table 20 continued on next page)

(Table 20 continued)

NORTHERN LOWER PENINSULA

County and type of use	Wood residue: Total		Coarse 1/		Fine 2/		Bark 3/	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Alcona								
Fiber products	.67	4.68	.67	4.68	0	0	0	0
Domestic fuel	1.88	2.37	1.88	2.37	0	0	0	0
Miscellaneous 4/	1.29	2.54	0	0	1.29	2.54	.22	1.03
Not used	.19	3.43	0	1.17	.19	2.26	.82	2.48
Total	4.03	13.02	2.55	8.22	1.48	4.80	1.04	3.51
Alpena								
Domestic fuel	.03	1.85	.03	1.85	0	0	0	.75
Miscellaneous 4/	.05	.29	0	0	.05	.29	.51	0
Not used	.19	2.40	.14	1.02	.05	1.38	.24	.46
Total	.27	4.54	.17	2.87	.10	1.67	.75	1.21
Antrim								
Fiber products	.02	.69	.02	.69	0	0	0	0
Industrial fuel	.69	.67	.69	.67	0	0	0	0
Domestic fuel	.13	3.88	.13	3.88	0	0	0	.18
Miscellaneous 4/	.49	2.51	0	0	.49	2.51	.44	.47
Not used	.04	.55	.03	.01	.01	.54	.04	1.51
Total	1.37	8.30	.87	5.25	.50	3.05	.48	2.16
Arenac								
Fiber products	0	.57	0	.57	0	0	0	0
Industrial fuel	0	.54	0	.54	0	0	0	.23
Domestic fuel	.07	.99	.07	.99	0	0	0	.28
Miscellaneous 4/	.25	4.92	.20	3.81	.05	1.11	.12	1.99
Not used	.11	2.33	0	0	.11	2.33	0	.02
Total	.43	9.35	.27	5.91	.16	3.44	.12	2.52
Bay								
Industrial fuel	0	.20	0	.20	0	0	0	0
Domestic fuel	0	.24	0	.24	0	0	0	0
Miscellaneous 4/	0	0	0	0	0	0	0	.02
Not used	0	.26	0	0	0	.26	0	.17
Total	0	.70	0	.44	0	.26	0	.19
Benzie								
Industrial fuel	0	.03	0	.02	0	.01	0	0
Domestic fuel	.01	.33	.01	.33	0	0	0	0
Miscellaneous 4/	.01	.22	0	0	.01	.22	0	0
Not used	0	.04	0	.04	0	0	.01	.16
Total	.02	.62	.01	.39	.01	.23	.01	.16
Charlevoix								
Fiber products	.92	7.29	.92	7.29	0	0	0	.01
Industrial fuel	.10	.92	0	.72	.10	.20	.07	.14
Domestic fuel	0	1.46	0	1.46	0	0	0	.11
Miscellaneous 4/	.43	5.24	0	0	.43	5.24	1.41	3.43
Not used	.01	.07	0	0	.01	.07	.03	.29
Total	1.46	14.98	.92	9.47	.54	5.51	1.51	3.98
Cheboygan								
Fiber products	1.11	15.24	1.11	15.24	0	0	0	0
Industrial fuel	0	.43	0	.17	0	.26	0	.07
Domestic fuel	0	.27	0	.27	0	0	0	.26
Miscellaneous 4/	.64	4.46	0	0	.64	4.46	.47	6.23
Not used	0	4.91	0	.32	0	4.59	0	.23
Total	1.75	25.31	1.11	16.00	.64	9.31	.47	6.79
Clare								
Fiber products	.06	8.66	.06	8.66	0	0	.03	1.28
Domestic fuel	.01	.77	.01	.77	0	0	.01	.80
Miscellaneous 4/	.05	5.06	0	0	.05	5.06	0	.90
Not used	0	.43	0	0	0	.43	0	1.03
Total	.12	14.92	.07	9.43	.05	5.49	.04	4.01

(Table 20 continued on next page)

(Table 20 continued)

NORTHERN LOWER PENINSULA

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark 3/	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Crawford								
Fiber products	4.18	16.85	4.18	16.85	0	0	0	0
Industrial fuel	.01	0	.01	0	0	0	0	0
Domestic fuel	.02	.01	.02	.01	0	0	0	0
Miscellaneous 4/	.02	.10	0	0	.02	.10	1.79	7.23
Not used	3.30	10.73	.55	.64	2.75	10.09	.23	.22
Total	7.53	27.69	4.76	17.50	2.77	10.19	2.02	7.45
Emmet								
Fiber products	.02	2.03	.02	2.03	0	0	0	0
Industrial fuel	0	8.58	0	6.18	0	2.40	0	1.75
Domestic fuel	0	.51	0	.51	0	0	0	.52
Miscellaneous 4/	.01	1.53	0	0	.01	1.53	0	.52
Not used	0	2.63	0	0	0	2.63	0	1.29
Total	.03	15.28	.02	8.72	.01	6.56	0	4.08
Gladwin								
Fiber products	0	1.84	0	1.84	0	0	0	0
Industrial fuel	0	.02	0	.02	0	0	0	.01
Domestic fuel	0	.48	0	.48	0	0	0	.50
Miscellaneous 4/	0	1.10	0	0	0	1.10	0	.49
Not used	0	.27	0	0	0	.27	0	0
Total	0	3.71	0	2.34	0	1.37	0	1.00
Iosco								
Fiber products	.09	.01	.09	.01	0	0	0	0
Industrial fuel	.01	.21	0	.21	.01	0	0	0
Domestic fuel	.01	1.07	.01	1.07	0	0	0	0
Miscellaneous 4/	.05	.75	0	0	.05	.75	.03	.10
Not used	0	0	0	0	0	0	0	.46
Total	.16	2.04	.10	1.29	.06	.75	.03	.56
Isabella								
Fiber products	0	.27	0	.27	0	0	0	0
Domestic fuel	.65	13.01	.65	13.01	0	0	0	.07
Miscellaneous 4/	.22	7.69	0	0	.22	7.69	.16	4.89
Not used	.16	.04	0	0	.16	.04	.14	.55
Total	1.03	21.01	.65	13.28	.38	7.73	.30	5.51
Kalkaska								
Fiber products	.02	7.30	.02	7.30	0	0	0	0
Industrial fuel	0	.38	0	.38	0	0	0	0
Domestic fuel	.56	.17	.56	.17	0	0	.01	.04
Miscellaneous 4/	.30	.16	0	0	.30	.16	.01	.04
Not used	.23	4.50	.12	.06	.11	4.44	.28	3.27
Total	1.11	12.51	.70	7.91	.41	4.60	.30	3.35
Lake								
Fiber products	0	9.19	0	9.19	0	0	0	1.97
Miscellaneous 4/	0	5.57	0	.14	0	5.43	0	2.01
Total	0	14.76	0	9.33	0	5.43	0	3.98
Leelanau								
Fiber products	.03	.60	.03	.60	0	0	0	0
Domestic fuel	.04	.25	.04	.25	0	0	0	0
Miscellaneous 4/	.02	.35	0	0	.02	.35	.01	.23
Not used	.02	.15	0	0	.02	.15	.02	.08
Total	.11	1.35	.07	.85	.04	.50	.03	.31
Manistee								
Fiber products	.29	2.38	.29	2.38	0	0	0	0
Domestic fuel	0	.80	0	.80	0	0	0	.24
Miscellaneous 4/	.04	.72	0	0	.04	.72	0	0
Not used	.13	1.13	0	0	.13	1.13	.12	.89
Total	.46	5.03	.29	3.18	.17	1.85	.12	1.13

(Table 20 continued on next page)

(Table 20 continued)

NORTHERN LOWER PENINSULA

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark 3/	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Mason								
Fiber products	.28	5.26	.28	5.26	0	0	0	0
Industrial fuel	0	.11	0	.11	0	0	0	.02
Domestic fuel	0	1.92	0	1.92	0	0	0	.46
Miscellaneous 4/	.16	4.35	0	0	.16	4.35	.06	1.07
Not used	0	2.31	0	1.53	0	.78	.06	2.11
Total	.44	13.95	.28	8.82	.16	5.13	.12	3.66
Mecosta								
Fiber products	0	1.03	0	1.03	0	0	0	0
Domestic fuel	0	2.59	0	2.59	0	0	0	.28
Miscellaneous 4/	0	1.95	0	0	0	1.95	0	1.27
Not used	0	.15	0	0	0	.15	0	0
Total	0	5.72	0	3.62	0	2.10	0	1.55
Midland								
Fiber products	.07	2.94	.07	2.94	0	0	0	0
Industrial fuel	.04	.98	.04	.98	0	0	0	0
Domestic fuel	.04	3.39	.04	3.39	0	0	0	.36
Miscellaneous 4/	.04	3.03	0	0	.04	3.03	0	.36
Not used	.04	1.23	0	0	.04	1.23	.06	2.39
Total	.23	11.57	.15	7.31	.08	4.26	.06	3.11
Missaukee								
Fiber products	.40	3.62	.40	3.62	0	0	.17	1.54
Domestic fuel	.06	.09	.06	.09	0	0	0	0
Miscellaneous 4/	.27	2.15	0	0	.27	2.15	0	0
Not used	0	0	0	0	0	0	.02	.04
Total	.73	5.86	.46	3.71	.27	2.15	.19	1.58
Montmorency								
Fiber products	0	2.25	0	2.25	0	0	0	0
Domestic fuel	.20	.06	.20	.06	0	0	.07	.06
Miscellaneous 4/	.20	.73	0	0	.20	.73	0	.06
Not used	.33	9.12	.26	5.37	.07	3.75	.27	3.12
Total	.73	12.16	.46	7.68	.27	4.48	.34	3.24
Newaygo								
Fiber products	0	4.80	0	4.80	0	0	0	0
Domestic fuel	.18	6.60	.18	6.60	0	0	.08	3.05
Miscellaneous 4/	.11	3.80	0	0	.11	3.80	0	1.80
Not used	0	3.67	0	.52	0	3.15	0	.23
Total	.29	18.87	.18	11.92	.11	6.95	.08	5.08
Oceana								
Fiber products	0	.75	0	.75	0	0	0	0
Industrial fuel	0	.20	0	.20	0	0	0	0
Domestic fuel	.17	2.93	.17	2.93	0	0	.07	1.33
Miscellaneous 4/	.12	2.36	.04	.24	.08	2.12	.02	.35
Not used	.04	1.25	0	.44	.04	.81	0	.31
Total	.33	7.49	.21	4.56	.12	2.93	.09	1.99
Ogemaw								
Fiber products	.17	4.62	.17	4.62	0	0	0	0
Industrial fuel	.09	1.23	.09	.77	0	.46	0	.16
Domestic fuel	.03	2.05	.03	2.05	0	0	.01	.70
Miscellaneous 4/	.13	3.57	0	.60	.13	2.97	0	1.03
Not used	.20	1.99	.10	.47	.10	1.52	.16	1.73
Total	.62	13.46	.39	8.51	.23	4.95	.17	3.62

(Table 20 continued on next page)

(Table 20 continued)

NORTHERN LOWER PENINSULA

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark 3/	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Osceola								
Fiber products	.39	8.28	.39	8.28	0	0	.16	3.38
Industrial fuel	0	.01	0	.01	0	0	0	.01
Domestic fuel	0	3.45	0	3.45	0	0	0	1.48
Miscellaneous 4/	0	1.91	0	0	0	1.91	0	.07
Not used	.22	5.09	0	.10	.22	4.99	0	.04
Total	.61	18.74	.39	11.84	.22	6.90	.16	4.98
Oscoda								
Fiber products	18.63	2.11	18.63	2.11	0	0	0	0
Industrial fuel	.02	.10	.02	.10	0	0	.01	.05
Domestic fuel	.17	2.52	.17	2.52	0	0	.08	1.07
Miscellaneous 4/	5.47	1.70	0	0	5.47	1.70	0	0
Not used	7.65	7.29	1.37	3.94	6.28	3.35	8.51	2.58
Total	31.94	13.72	20.19	8.67	11.75	5.05	8.60	3.70
Otsego								
Not used	0	3.18	0	2.01	0	1.17	0	.86
Total	0	3.18	0	2.01	0	1.17	0	.86
Presque isle								
Domestic fuel	0	.05	0	.05	0	0	0	.02
Miscellaneous 4/	.01	0	0	0	.01	0	0	0
Not used	.10	.13	.07	.06	.03	.07	.85	.03
Total	.11	.18	.07	.11	.04	.07	.85	.05
Roscommon								
Fiber products	.63	9.38	.63	9.38	0	0	0	0
Industrial fuel	.20	.80	.20	.80	0	0	0	0
Domestic fuel	.30	1.71	.30	1.71	0	0	0	.53
Miscellaneous 4/	.64	8.55	0	2.01	.64	6.54	.05	3.22
Not used	.03	1.59	0	.03	.03	1.56	.44	2.17
Total	1.80	22.03	1.13	13.93	.67	8.10	.49	5.92
Wexford								
Fiber products	1.00	3.15	1.00	3.15	0	0	0	0
Industrial fuel	0	.03	0	.03	0	0	0	0
Domestic fuel	.98	.14	.98	.14	0	0	0	0
Miscellaneous 4/	1.03	.55	0	0	1.03	.55	.75	.48
Not used	.12	1.60	0	.13	.12	1.47	0	.97
Total	3.13	5.47	1.98	3.45	1.15	2.02	.75	1.45
All counties								
Fiber products	28.98	125.79	28.98	125.79	0	0	.36	8.18
Industrial fuel	1.16	15.44	1.05	12.11	.11	3.33	.08	2.44
Domestic fuel	5.54	55.96	5.54	55.96	0	0	.33	13.19
Miscellaneous 4/	12.05	77.86	.24	6.80	11.81	71.06	6.05	39.28
Not used	13.11	72.47	2.64	17.86	10.47	54.61	12.30	29.73
Total	60.84	347.52	38.45	218.52	22.39	129.00	19.12	92.82

(Table 20 continued on next page)

(Table 20 continued)

SOUTHERN LOWER PENINSULA

County and type of use	Wood residue: Total		Coarse 1/		Fine 2/		Bark 3/	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Allegan								
Industrial fuel	0	.01	0	.01	0	0	0	.01
Domestic fuel	0	1.24	0	1.24	0	0	0	.47
Miscellaneous 4/	0	.73	0	0	0	.73	0	.05
Total	0	1.98	0	1.25	0	.73	0	.53
Barry								
Fiber products	0	20.33	0	20.33	0	0	0	0
Miscellaneous 4/	0	5.92	0	0	0	5.92	0	8.65
Not used	0	5.92	0	0	0	5.92	0	0
Total	0	32.17	0	20.33	0	11.84	0	8.65
Berrien								
Industrial fuel	0	.14	0	0	0	.14	0	0
Miscellaneous 4/	0	.40	0	.04	0	.36	0	.12
Not used	0	.48	0	.48	0	0	0	.15
Total	0	1.02	0	.52	0	.50	0	.27
Branch								
Fiber products	0	5.55	0	5.55	0	0	0	0
Miscellaneous 4/	0	3.23	0	0	0	3.23	0	2.34
Total	0	8.78	0	5.55	0	3.23	0	2.34
Calhoun								
Industrial fuel	0	.02	0	.02	0	0	0	.01
Domestic fuel	0	.02	0	.02	0	0	0	0
Miscellaneous 4/	0	.01	0	0	0	.01	0	.01
Not used	0	.02	0	0	0	.02	0	0
Total	0	.07	0	.04	0	.03	0	.02
Cass								
Industrial fuel	0	2.77	0	2.77	0	0	0	0
Miscellaneous 4/	0	1.61	0	0	0	1.61	0	1.15
Not used	0	1.68	0	1.06	0	.62	0	.44
Total	0	6.06	0	3.83	0	2.23	0	1.59
Clinton								
Fiber products	0	5.72	0	5.72	0	0	0	0
Miscellaneous 4/	0	3.33	0	0	0	3.33	0	2.40
Total	0	9.05	0	5.72	0	3.33	0	2.40
Eaton								
Fiber products	0	5.56	0	5.56	0	0	0	0
Industrial fuel	0	4.09	0	.60	0	3.49	0	1.77
Domestic fuel	0	.05	0	.05	0	0	0	0
Miscellaneous 4/	0	.12	0	0	0	.12	0	.85
Total	0	9.82	0	6.21	0	3.61	0	2.62
Genesee								
Fiber products	0	.91	0	.91	0	0	0	0
Domestic fuel	0	.23	0	.23	0	0	0	.24
Miscellaneous 4/	0	.53	0	0	0	.53	0	.24
Not used	0	.13	0	0	0	.13	0	0
Total	0	1.80	0	1.14	0	.66	0	.48
Gratiot								
Fiber products	0	.99	0	.99	0	0	0	0
Domestic fuel	0	.25	0	.25	0	0	0	.26
Miscellaneous 4/	0	.57	0	0	0	.57	0	.26
Not used	0	.14	0	0	0	.14	0	0
Total	0	1.95	0	1.24	0	.71	0	.52

(Table 20 continued on next page)

(Table 20 continued)

SOUTHERN LOWER PENINSULA

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark 3/	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Hillsdale								
Miscellaneous 4/	0	.01	0	0	0	.01	0	0
Not used	0	.01	0	.01	0	0	0	.01
Total	0	.02	0	.01	0	.01	0	.01
Huron								
Fiber products	0	.40	0	.40	0	0	0	0
Industrial fuel	0	3.59	0	3.59	0	0	0	0
Domestic fuel	0	3.69	0	3.69	0	0	0	.11
Miscellaneous 4/	0	4.41	0	0	0	4.41	0	3.16
Not used	0	.06	0	0	0	.06	0	0
Total	0	12.15	0	7.68	0	4.47	0	3.27
Ingham								
Fiber products	0	8.35	0	8.35	0	0	0	0
Domestic fuel	0	2.77	0	2.77	0	0	0	0
Miscellaneous 4/	0	6.45	0	0	0	6.45	0	4.73
Not used	0	.03	0	0	0	.03	0	0
Total	0	17.60	0	11.12	0	6.48	0	4.73
Ionia								
Fiber products	0	11.39	0	11.39	0	0	0	0
Industrial fuel	0	.27	0	.27	0	0	0	.11
Domestic fuel	0	3.11	0	3.11	0	0	0	.45
Miscellaneous 4/	0	8.54	0	0	0	8.54	0	5.12
Not used	0	.05	0	0	0	.05	0	.45
Total	0	23.36	0	14.77	0	8.59	0	6.13
Jackson								
Not used	0	.29	0	.18	0	.11	0	.08
Total	0	.29	0	.18	0	.11	0	.08
Kalamazoo								
Industrial fuel	0	.04	0	.04	0	0	0	.03
Domestic fuel	0	.10	0	.10	0	0	0	.04
Miscellaneous 4/	0	.13	0	0	0	.13	0	0
Total	0	.27	0	.14	0	.13	0	.07
ent								
Fiber products	.04	17.58	.04	17.58	0	0	0	4.72
Domestic fuel	0	.17	0	.17	0	0	0	.07
Miscellaneous	.03	10.27	0	0	.03	10.27	.02	2.73
Not used	0	.08	0	0	0	.08	0	0
Total	.07	28.10	.04	17.75	.03	10.35	.02	7.52
Lapeer								
Fiber products	0	.40	0	.40	0	0	0	0
Industrial fuel	0	.02	0	.02	0	0	0	.01
Domestic fuel	0	.18	0	.18	0	0	0	.14
Miscellaneous 4/	0	.55	0	0	0	.55	0	.11
Not used	0	.67	0	.55	0	.12	0	.23
Total	0	1.82	0	1.15	0	.67	0	.49
Lenawee								
Fiber products	0	8.32	0	8.32	0	0	0	0
Industrial fuel	0	.05	0	.05	0	0	0	.02
Miscellaneous 4/	0	6.67	0	1.14	0	5.53	0	3.99
Total	0	15.04	0	9.51	0	5.53	0	4.01

(Table 20 continued on next page

(Table 20 continued)

SOUTHERN LOWER PENINSULA

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark 3/	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Monroe								
Domestic fuel	0	1.56	0	1.56	0	0	0	0
Miscellaneous 4/	0	.91	0	0	0	.91	0	.67
Total	0	2.47	0	1.56	0	.91	0	.67
Montcalm								
Fiber products	0	.54	0	.54	0	0	0	0
Industrial fuel	0	.11	0	.11	0	0	0	.05
Domestic fuel	0	3.41	0	3.41	0	0	0	.21
Miscellaneous 4/	0	2.17	0	0	0	2.17	0	1.04
Not used	0	.90	0	.45	0	.45	0	.61
Total	0	7.13	0	4.51	0	2.62	0	1.91
Muskegon								
Fiber products	.09	1.30	.09	1.30	0	0	0	0
Industrial fuel	0	.45	0	.45	0	0	0	.19
Domestic fuel	.09	1.34	.09	1.34	0	0	0	.02
Miscellaneous 4/	0	.26	0	0	0	.26	.08	1.10
Not used	.11	1.84	0	.21	.11	1.63	0	.07
Total	.29	5.19	.18	3.30	.11	1.89	.08	1.38
Oakland								
Fiber products	0	.64	0	.64	0	0	0	0
Domestic fuel	0	1.27	0	1.27	0	0	0	.17
Miscellaneous 4/	0	1.02	0	0	0	1.02	0	.64
Not used	0	.09	0	0	0	.09	0	0
Total	0	3.02	0	1.91	0	1.11	0	.81
Ottawa								
Domestic fuel	.18	.91	.18	.91	0	0	.08	.39
Miscellaneous 4/	0	.53	0	0	0	.53	0	0
Not used	.11	.01	0	0	.11	.01	0	0
Total	.29	1.45	.18	.91	.11	.54	.08	.39
Saginaw								
Fiber products	0	1.76	0	1.76	0	0	0	0
Domestic fuel	0	2.79	0	2.79	0	0	0	.47
Miscellaneous 4/	0	2.12	0	0	0	2.12	0	.47
Not used	0	.53	0	0	0	.53	0	1.00
Total	0	7.20	0	4.55	0	2.65	0	1.94
St.Clair								
Fiber products	0	.74	0	.74	0	0	0	0
Domestic fuel	0	1.27	0	1.27	0	0	0	.20
Miscellaneous 4/	0	3.16	0	.92	0	2.24	0	.20
Not used	0	1.47	0	1.26	0	.21	0	1.39
Total	0	6.64	0	4.19	0	2.45	0	1.79
Shiawassee								
Fiber products	0	.59	0	.59	0	0	0	0
Domestic fuel	0	.15	0	.15	0	0	0	.16
Miscellaneous 4/	0	.34	0	0	0	.34	0	.16
Not used	0	.09	0	0	0	.09	0	0
Total	0	1.17	0	.74	0	.43	0	.32
Tuscola								
Fiber products	0	2.56	0	2.56	0	0	0	0
Industrial fuel	0	.06	0	.06	0	0	0	.02
Domestic fuel	.01	1.33	.01	1.33	0	0	0	.65
Miscellaneous 4/	0	1.92	0	0	0	1.92	0	1.00
Not used	0	.65	0	.17	0	.48	0	.07
Total	.01	6.52	.01	4.12	0	2.40	0	1.74

(Table 20 continued on next page)

(Table 20 continued)

SOUTHERN LOWER PENINSULA

County and type of use	Wood residue							
	Total		Coarse 1/		Fine 2/		Bark 3/	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Van Buren								
Industrial fuel	.05	.38	.03	.24	.02	.14	.01	.40
Miscellaneous 4/	0	.46	0	.29	0	.17	0	.13
Not used	0	1.10	0	.43	0	.67	0	0
Total	.05	1.94	.03	.96	.02	.98	.01	.53
Washtenaw								
Domestic fuel	0	.97	0	.97	0	0	0	0
Miscellaneous 4/	0	.38	0	0	0	.38	0	.27
Not used	0	.41	0	.14	0	.27	0	.20
Total	0	1.76	0	1.11	0	.65	0	.47
All counties								
Fiber products	.13	93.63	.13	93.63	0	0	0	4.72
Industrial fuel	.05	12.00	.03	8.23	.02	3.77	.01	2.62
Domestic fuel	.28	26.81	.28	26.81	0	0	.08	4.05
Miscellaneous 4/	.03	66.75	0	2.39	.03	64.36	.10	41.59
Not used	.22	16.65	0	4.94	.22	11.71	0	4.70
Total	.71	215.84	.44	136.00	.27	79.84	.19	57.68
Total Michigan								
Fiber products	52.24	346.96	52.24	346.96	0	0	.36	12.90
Industrial fuel	20.97	105.65	8.68	52.54	12.29	53.11	7.98	36.61
Domestic fuel	14.33	104.64	14.33	104.64	0	0	3.14	21.92
Miscellaneous 4/	17.58	200.94	.24	24.63	17.34	176.31	11.01	98.64
Not used	23.28	145.17	5.64	26.68	17.64	118.49	16.88	69.16
Total	128.40	903.36	81.13	555.45	47.27	347.91	39.37	239.23

1/ Suitable for chipping such as slabs, edgings, veneer cores, etc.
2/ Not suitable for chipping such as sawdust, veneer clippings, etc.
3/ Does not include bark at pulpmills and particleboard plants.
4/ Livestock bedding, mulch, small dimension, and specialty items.

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Blyth, James E., Jack Zollner, and W. Brad Smith.

1981. Primary forest products industry and timber use, Michigan, 1977. U.S. Department of Agriculture Forest Service, Resource Bulletin NC-55, 54 p. U.S. Department of Agriculture Forest Service, North Central Forest Experiment Station, St. Paul, Minnesota.

Discusses recent Michigan forest industry trends, timber removals for industrial roundwood in 1977, and production and receipts of pulpwood, saw logs, and other industrial roundwood products. Reports on associated logging and primary mill residues and the disposition of mill residue.

KEY WORDS: Pulpwood, saw logs, production, logging residue, mill residue, timber removals.